DOMESTIC ENGINEERING

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BY

Domestic Engineering (Inc.)

Jno. K. Allen, President and Treasurer.
Elmer Crawford, Vice-President.
Frank P. Keeney, Secretary.
E. D. F. Winslow, Asst. Secretary.

Jno. K. Allen, Editor.

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NOTICE TO ADVERTISERS.

Copy and cuts for advertisements intended for a particular issue should reach the office of DOMESTIC ENGINEERING on Wednesday of the previous week if it is desired that a proof of the advertisement shall be submitted. New advertisements can be received up to noon of Wednesday of the week of issue, but no proof can be shown.

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Suggestion:
Cut out; frame neatly; put in show window; change weekly.

WATER COSTS MONEY

Your water-supply costs real money to pump and distribute. It seems the cheapest thing you buy, but you pay for it, just the same, in meter rates, water-tax and general taxes.

DO NOT WASTE IT

If you use cheap plumbing fixtures the water drips, drips and dribbles away,—ceaselessly, uselessly, a steady stream of money going into the sewer. We advise the use of none but good goods, bearing the maker's name, and backed by his guarantee. Let him stand the loss.

A Plumbing Firm Hits on a Good Idea

Coons & Golder, 22 W. Adams St., Jacksonville, Fla., have conceived the idea of cutting out the terse editorial printed in bold faced type each week on the editorial page of "Domestic Engineering," and placing it in a frame and using it as an **advertisement** of their business, displaying it in their **show window.** Other readers of "Domestic Engineering" who do good work, install good material, bearing the manufacturer's name and behind which he stands with a guarantee of satisfactory operation and durability, **will find this idea an excellent one to carry out,** and we extend permission to all subscribers of "Domestic Engineering" who may desire to do this. Do not, however, claim credit for what you do not do, and unless you are willing to class yourself among those firms who desire to receive credit for doing good work only, for heaven's sake do not deceive anyone by using our editorials in this fashion.

* * *

Circulation of Trade Papers

Advertisers in trade and class publications should always remember that **the basic factor** which is to be considered in placing advertising is the **number of copies circulated** and the **character and the distribution of the circulation.**

So far as the number of copies circulated is concerned it should be adequate to place the advertising announcements in the paper before a sufficiently large percentage of the persons engaged in that particular line of business, to permit the advertiser to reach a satisfactory proportion of the purchasing power, and very careful scrutiny should be given by advertisers to this feature of any paper with which he does business.

The Technical Publicity Association is an organization of firms who advertise in class publications, three of its objects being to "promote and advocate betterment in the art of publicity and advertising; to correct abuses; to collect and disseminate information."

The character of the membership of this association is very high, as will be observed by the officers. The president is Charles S. Redfield, advertising manager of the Yale & Towne Mfg. Co., of New York City; the first vice-president is Rodman Gilder, publicity manager and secretary of the Crocker-Wheeler Co., of Ampere, N. J.; the second vice-president is Charles A. Manfred, manager of the advertising department of the H. W. Johns-Manville Co., of New York City; the secretary is H. H. Kress, publicity manager of the A. S. Cameron Steam Pump Co., of New York City, and the treasurer is H. M. Davis, advertising manager of the Sprague Electric Company, of New York City.

The association gives trade paper publishers an

opportunity of submitting a complete report as to the circulation of their periodical, and this report covers the geographical distribution, the total number of copies circulated and the character of persons receiving such copies. In the Bulletin of the association for February, 1909, there is published a list of trade publications who **"have submitted excellent reports"** to the circulation committee of the association. Advertisers in "Domestic Engineering" will be interested in knowing that this publication is the only one reaching the plumbing and heating industry which is included in their list. The report concludes: "The willingness of the better papers to give freely all information asked for has been most gratifying."

Soil and Vent Pipe Design*

By F. W. Tower, Springfied, Mass.

Editorial Note: The author of this paper is Inspector of Plumbing at Springfield, Mass., and besides being an excellent administrative officer, is a close student of sanitary subjects, and is the author of a useful book of "Questions and Answers for Plumbers." In this article Mr. Tower shows how designers of plumbing are breaking away from accepted methods of construction and presents two systems in which the vent system is unusual.
Editor.

Occupants of a dwelling may continue to enjoy good health in the face of dangerous defects in a plumbing system as long as ample provision is made for its ventilation.

All sewers and drains should have open communication with the atmosphere at some point to enable air to pass freely to accommodate changes in volume of the liquid flowing through them, or to form a relief pipe for the escape of drain air.

The natural ventilation of sewers and all underground drains is a current of air traveling towards their lower or outlet end during hot weather and towards the ventilating shaft, or upper end, during cold weather, unless otherwise temporarily affected by winds or discharges of waste matter.

The scouring force of a drain or soil pipe is greater when the pipe diameter is as small as consistent with the needs of the building, because the chance for obstruction is lessened, due to the greater velocity and scouring effect.

The proper diameter for a soil pipe is a matter which requires careful consideration.

The pipe should be large enough to convey without difficulty and within a reasonable time the largest quantity of water that will be required, yet not so large but that the ordinary flow will carry along the refuse that ordinarily accompanies the water.

The ventilation system is that part of the general system whose duty it is to convey to the outer atmosphere any gases of putrefaction that may be generated or contained within the drainage system, also to prevent, as far as possible, the existence of either a plenum or vacuum within the drainage system, to maintain the seals of all fixture traps, thus preventing the entrance of drain air into a building through the trap seals.

All drain and soil pipes should be so arranged that gases or vapors cannot accumulate or concentrate within the system.

This is avoided by extending all vertical lines through and above the roof with open ends well away from windows, light shafts, etc.

These pipes act as ventilators and any offensive odors are diffused through the atmosphere above the breathing zone and become harmless.

All vent pipes must have an inlet and outlet, otherwise there would be no movement or circulation of the drain air.

The Common Design.

The "standard" system of soil and vent pipes are extended up to and through the roof and each fixture trap is vented at or near its crown.

This system also includes the main drain trap with fresh air inlet at or near the front wall.

This system intends that each inch of waste pipe shall have a complete circulation of air and is generally installed as the most sanitary method throughout the United States.

This method frequently requires many horizontal lines of pipe to suitably vent each trap and many timbers are required to be cut often to the detriment of the building construction.

This article presents two methods of venting a plumbing system, both differing from common designs.

As air moves more readily in vertical lines, due to natural laws, it frequently proves inadequate in furnishing the required amount of air to prevent siphonage of a trap when a fixture is discharging.

Fixture trap seals with the usual depth of seal are usually siphoned when the friction caused by slight obstructions, such as scale or rust, prevent air reaching the crown of the trap when most needed.

*Read at the fourth annual meeting of the American Society of Inspectors of Plumbing and Sanitary Engineers, held at Omaha, Neb., February 8-10, 1909.

A Modified Design.

A modified system provides a vertical pipe line adjacent to the main soil pipe line, of suitable diameter, with branches connected from the soil line across to the vent line at each floor close to and above the branch for the fixture connecting to the soil pipe. See Figure 1.

In this system the fixtures are grouped near the main soil pipe line to shorten the waste, to secure better and quicker discharge of the fixture and lessen the expense.

Fixture traps exceeding 12′ from the vertical stack are vented on the continuous waste pipe plan.

In cottages or in buildings not exceeding four stories in height, a two or three inch vent line is allowed, but in buildings higher than four stories, the main line is of the same diameter as the soil pipe line, and connected at the base of the soil pipe thus allowing rust and scale to fall into the drain, thus becoming self cleansing.

As a vent line is intended to prevent siphonage, back pressure and dilute the air in the drainage system, these results are accomplished in this system of venting.

In short horizontal wastes, gases cannot collect in sufficient quantities to break through a 3″ trap seal, which is required in this system, as the current of air is more readily conveyed through the vertical line, as it is in the line of least resistance.

Non-siphon traps are used with this system and prove effective. A modified system was installed in Springfield, Mass., in 1898, and criticised as not being sanitary.

A six story building, with several fixtures closely adjoining the main soil pipe, was erected, and horizontal branches were not allowed, due to the necessity for cutting uprights, which would weaken the building if installed.

After installation of this plan, a severe test was made by causing each fixture on each floor to be simultaneously discharged.

No noticeable lowering of the trap seals was observed, but a slight waving motion of the upper trap seals was noted.

There were 36 siphon tanks discharged, each holding the usual supply as ordinarily furnished by the manufacturer.

When this test was applied the system was believed to be unsafely ventilated, but the result was both surprising and resulted in convincing many that the "standard" system was not the only method of safely installing a vent system.

As a result of this test it became apparent that other buildings could be safely piped on the modified plan, and because of the lower expense, many apartment buildings, also cottages, are now installing this system with economy and sanitary safety.

No main drain trap is installed, as it is an obstruction to the flow of air or waste, a cause of compressing the air when fixtures are discharging which frequently causes trap seals on lower floors to siphon or become forced by back pressure.

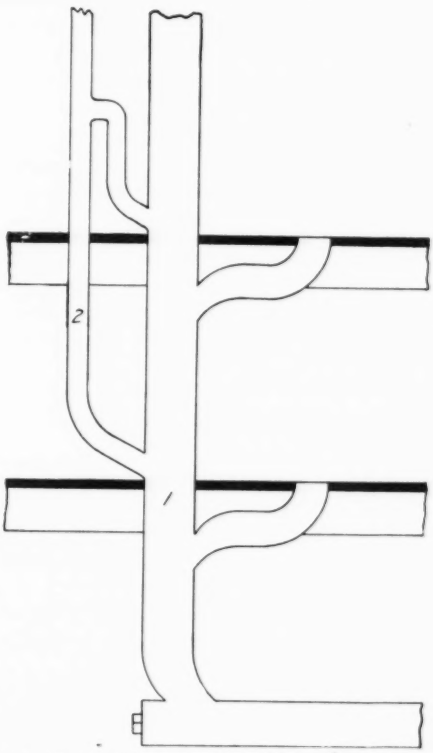


Fig. 1. Suggested connection of vent line to soil pipe stack to avoid syphonage by fixtures vented. No. 1 is main stack. No. 2 is vent line connected just above the floor branches.

With the pipe line open at both ends, no gases accumulate, as no opportunity offers, or any concentration, to produce back pressure.

If tidal or high water enters the drain or fills the sewer, the air is not compressed as nothing prevents the free flow to the roof.

All air movement is natural and equilibrium maintained at all times on each side of the trap seals.

Still Another Modification.

With the installing of the modified plan, another system has naturally developed, when conditions will permit, and is particularly adapted where a number of fixtures are to be connected on a long horizontal branch, on one or many floors, such as

office toilets, dormitories, railroad stations, schools, etc. (See Fig. 2).

Two main lines, of same diameter, one used as an air line, the other as the soil or waste pipe line, are connected beyond the last fixture on the horizontal line from the outlet end, above the overflow point of the fixtures, thus making a continuous vent or circulation system.

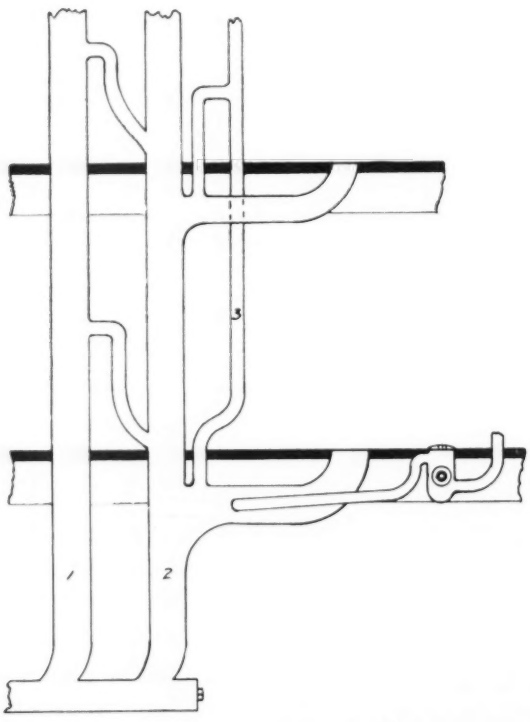


Fig. 2. Two suggested methods of venting to prevent syphonage of fixtures. No. 1 is main stack. No. 2 is main vent line if installation is four stories or over. No. 3 is 2" vent line to be used if installation is less than four stories and not exceeding thirty feet in height. Note that No. 2 and No. 3 are not to be used at the same time.

This avoids the separate venting of each fixture with small air pipes, and with 19 water closets, on one such line, all discharging at once, no siphonage took place.

With large air lines it is surprising how much air will reach the drain and prevent either a vacuum or plenum with this system.

With this system both the waste and air lines are extended separately through the roof, but the lower end of the air line is connected at the base in such a manner as to be self cleansing.

The conditions to be met and the use of the building govern the method to be installed.

In all cases ample air circulation is provided and as yet no back pressure or siphonage has been reported.

In reporting these systems it is not claimed that a new system of venting plumbing systems is advaneed, but under the conditions in which these methods have been installed, nothing detrimental to health is apparent from such installations, and some consideration should be given to hard facts.

How to Test Efficiency of Small House Heating Boilers

Editorial Note: We have just received a request which reads:

"Can you give me a sure rule to measure capacity of a round sectional water boiler? The manufacturer's rating does not suit me and I would like to have absolutely reliable information on this point.

"Respectfully yours, (Signature)."

This is a good example of requests which frequently reach our desk. Perhaps no better answer can be made to such letters than to publish this article on "The Rating of House Heating Boilers" by William Kent, dean and professor of mechanical engineering in the L. C. Smith College of Applied Science, Syracuse University, Syracuse, N. Y., compiler of "Kent's Mechanical Engineers Pocket Book." Professor Kent is a member of the American Society of Heating and Ventilating Engineers and read this brief paper before that Society. Editor.

Testing Cast Iron House Heating Boilers.

The testing of the evaporating power and the economy of small-sized boilers is more difficult than the testing of large steam boilers for the reason that the small quantity of coal burned in a day makes it impossible to procure a uniform condition of the coal on the grate throughout the test, and large errors are apt to be made in the calculation on account of the difference of condition at the beginning and end of a test. The following is suggested as a method of test which will avoid these errors:

(*a*) *Measure the grate surface and weigh out an amount of coal* equal to 30, 40 or 50 pounds per square foot of grate, according to the type, A, B or C, or the ratio of heating to grate surface.

(*b*) *Disconnect the steam pipe,* so that the steam may be wasted at atmospheric pressure. *Fill the boiler with cold water* to a marked level. and take the weight of this water and its temperature.

(*c*) *Start a brisk fire with plenty of wood,* so as to cause the coal to ignite rapidly; feed the coal as needed, and gradually increase the thickness of the bed of coal as it burns brightly on top, getting the fire-pot full as the last of the coal is fired. Then burn away all the coal until it ceases to make steam, when the test may be considered as at an end.

(*d*) *Record the temperature of the gases of combustion* in the flue every half-hour.

(*e*) *Periodically, as needed, feed cold water,* which has been weighed, to bring the water level to

the original mark. Record the time and the weight.

CALCULATIONS.

Total water fed to the boiler, including original cold water, pounds x (212°—original cold-water temperature)= .....B.T.U.
Water apparently evaporated, pounds x 966= .....B.T.U.
Add correction for increased bulk of hot water:

$$\text{Original water, pounds} \times \frac{(62.3-59.8)}{62.3} \times 966 = \ldots . \text{B.T.U.}$$

Total .....B.T.U.

Divide by 966 to obtain equivalent water evaporation from and at 212 degrees F.

Divide by the number of pounds of coal to obtain equivalent water per pound of coal.

The last result may be considerably less than 10 pounds on account of imperfect combustion at the beginning of the test, excessive air supply, when the coal bed is thin in the latter half of the test, and loss by radiation, but the results will be fairly comparable with other results from boilers of the same size and run under the same conditions. The records of water fed and of temperature of gases should be plotted, with time as the base, for comparison with other tests.

Rating House Heating Cast Iron Steam Boilers.

The rating of a steam boiler for house heating may be based upon one or more of several data: 1, *square feet of grate surface;* 2, *square feet of heating surface;* 3, *coal burning capacity;* 4, *steam making capacity;* 5, *square feet of steam radiating surface, including mains, that it will supply.* In establishing such a rating the following considerations should be taken into account:

1. One square foot of cast iron radiator surface will give off about 250 B. T. U. per hour under ordinary conditions of temperature of steam at 212 degrees and temperature of room at 70 degrees.

2. One pound of good anthracite or semi-bituminous coal under the best conditions of air supply, in a boiler properly proportioned, will transmit about 10,000 B. T. U. to the boiler.

3. In order to obtain this economical result from the coal the boilers should be driven at a rate not greatly exceeding 2 pounds of water evaporated from and at 212 degrees per square foot of heating surface per hour, corresponding to a heat transmission of $2 \times 966 = 1{,}932$, or, say, approximately 2,000 B. T. U. per hour per square foot of heating surface.

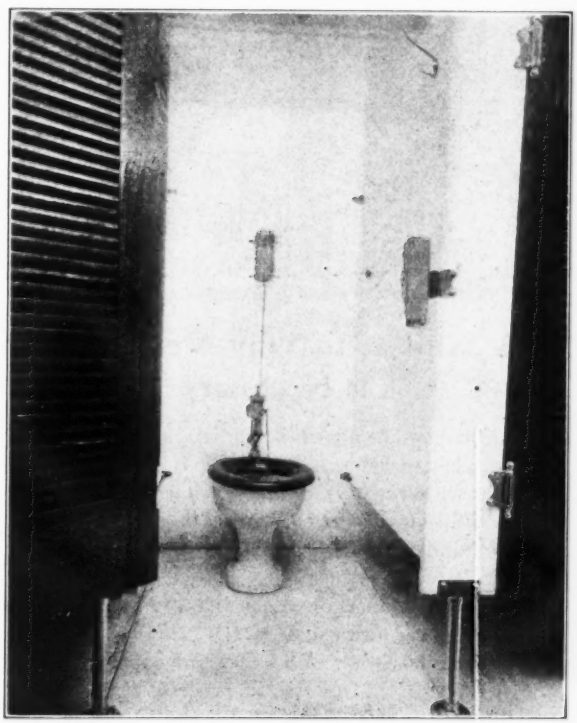
4. A satisfactory boiler or furnace for house heating should not require coal to be fed oftener than once in 8 hours: this requires a rate of burning of only 3 to 5 pounds of coal per square foot of grate per hour.

5. For commercial and constructive reasons, it is not convenient to establish a fixed ratio of heating to grate surface for all sizes of boilers. The grate surface is limited by the available area in which it may be placed, but on a given grate more heating surface may be piled in one form of boiler than in another, and in boilers of one general form one boiler may be built higher than another, obtaining thus a greater amount of heating surface.

6. The rate of burning coal and the ratio of heating to grate surface both being variable, the coal burning rate and the ratio may be so related to each other as to establish condition 3, viz., a rate of evaporation of 2 pounds of water from and at 212 degrees per square foot of heating surface per hour.

These general considerations lead to the following calculations:

	Low Boiler.	Medium.	High boiler.
1 sq. ft. of grate-surface should burn.	3	4	5 lbs. coal per hour.
1 sq. ft. of grate-surface should develop	30,000	40,000	50,000 B. T. U. per hour.
1 sq. ft. of grate-surface will require.	15	20	25 sq. ft. heating-surface.
1 sq. ft. of grate-surface will supply.	120	160	200 sq. ft radiating-surface.
Type of boiler, depending on ratio heating-surface ÷ grate surface	A.	B.	C.



Interior of Water Closet Stall of the new Public Comfort Station at Atlantic City, N. J., showing type of fixtures used. For illustration of exterior, see page xxv.

1 lb. of coal, 10,000 B.T.U. utilized in the boiler, will supply 10,000÷250=40 sq. ft. radiating-surface.
1 lb. of coal, 10,000 B.T.U. utilized in the boiler, will require 10,000÷2,000=5 sq. ft. heating-surface.
1 sq. ft. of boiler heating-surface will supply 2,000÷250 or 40÷5=8 sq. ft. radiating-surface.

Table of Ratings.

Type and No.	Square Feet Grate	Square Feet Heating-surface	Coal Burned per Hour—Pounds	Water Evaporated per Hour—Pounds	Radiating-surface Supplied—Sq. Ft.
A 1	1	15	3	30	120
A 2	2	30	6	60	240
A 3	3	45	9	90	360
A 4	4	60	12	120	480
A 5	5	75	15	150	600
B 4	4	80	16	160	640
B 5	5	100	20	200	800
B 6	6	120	24	240	960
B 7	7	140	28	280	1,120
B 8	8	160	32	320	1,280
C 6	6	150	30	300	1,200
C 7	7	175	35	350	1,400
C 8	8	200	40	400	1,600
C 10	10	250	50	500	2,000
C 12	12	300	60	600	2,400
C 14	14	350	70	700	2,800
C 16	16	400	80	800	3,200

The table is based on the utilization in the boiler of 10,000 B. T. U. per pound of good coal. For poorer coal the same figures will hold good except the pounds coal burned per hour, which should be increased in the ratio of the B. T. U. of the good to that of the poor coal. Thus for coal from which 8,000 B. T. U. can be utilized the coal burned per hour will be 25 per cent. greater.

For comparison with the above table the following figures are taken and calculated from the catalogue of a prominent maker of cast iron boilers:

	Height.	G Grate.	H Heating-surface.	R Radiating-surface.	H—G	R—G	R—H	B. T. U. per Hour = R×250	H / B. T. U.	Coal per hour per sq. ft. grate.*
Low	2.1	45	210	21.5	100	4.7	52,500	1,167	2.5	
	4.7	90	600	19.1	128	6.7	150,000	1,667	3.6	
Medium	4.2	103	600	24.5	143	5.8	150,000	1,456	3.6	
	8.2	195	1,500	23.8	183	7.7	375,000	1,923	4.6	
	6.7	210	1,200	31.3	179	5.7	300,000	1,476	4.5	
High	14.7	420	3,300	28.6	225	7.9	825,000	1,964	5.6	

*Equals B. T. U. per hour ÷ 10,000 G.

A Hint as to Why Ventilation is Necessary

All human beings and animals are in need of oxygen as an aid to continued existence. Oxygen gas is withdrawn from the air during respiration and chemically combines inside of the organism with carbon and hydrogen (a so-called process of combustion), thus furnishing a portion of the body's heat. The products of combustion are carbonic acid and water and are exhaled.

A certain amount of an inclosed quantity of air will, through the respiration process, be poorer in pure oxygen, and, on the other hand, richer in carbonic acid (CO_2) and vapor (H_2O).

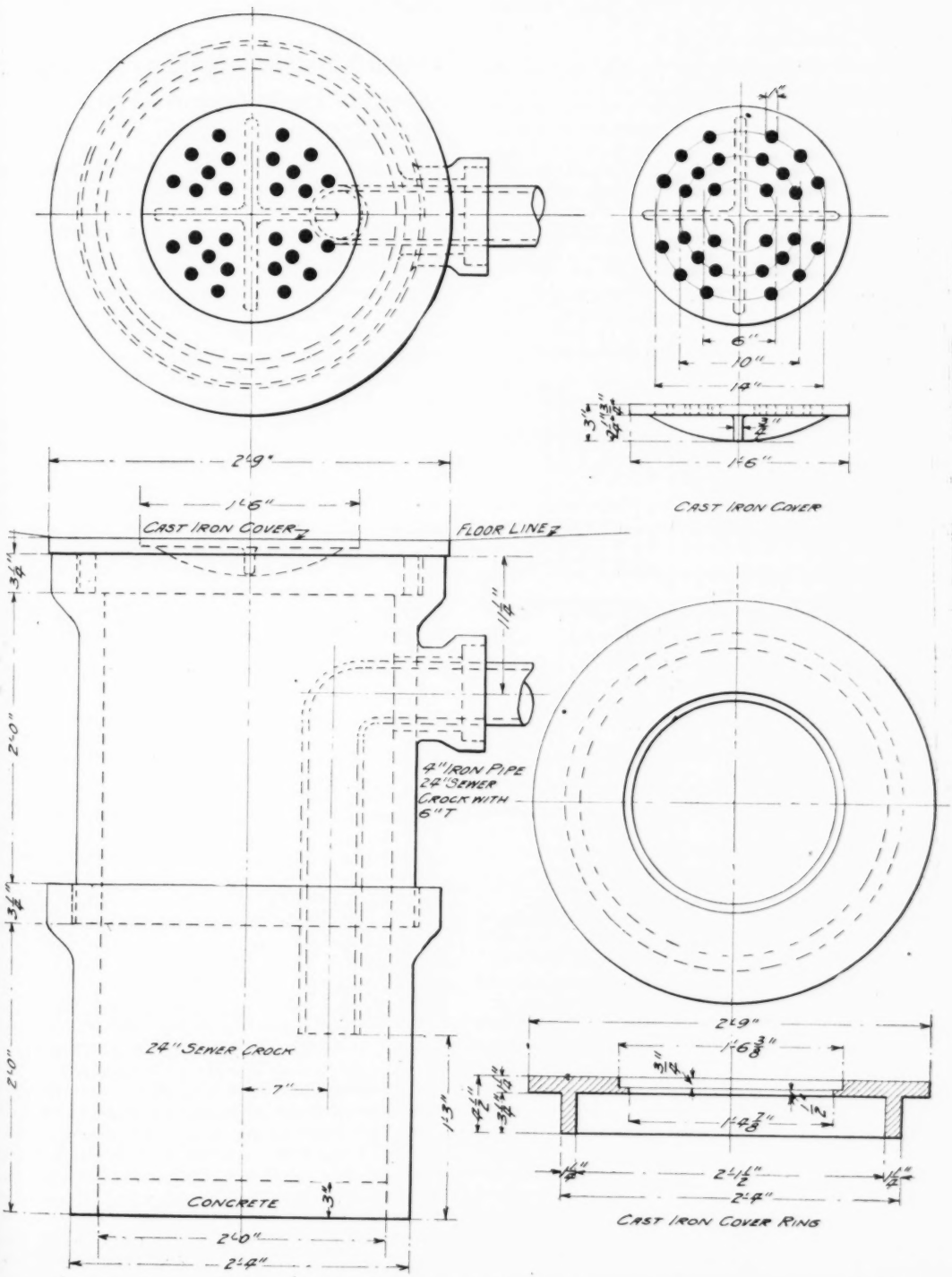
With the air will be mixed, by the exhaling and perspiring process, other gases and organic substances having a bad odor. To compensate for the consumed oxygen (O_2), to dilute the produced carbonic acid and substances otherwise thrown off, and also often to remove the bodily produced heat and vapor, requires renewing of the surrounding air. This is ventilation. Ventilation is also required to dilute or to replace the products of the combustion resulting from lighting and other admixtures with our air caused by chemical or mechanical processes (gases, vapors, dust, etc.).

Floor Drainage in a Garage

New problems constantly confront sanitary engineers and inspectors of plumbing. New industries as they develop bring new conditions which must be met. The rapid increase in the use of automobiles using gasoline as fuel requires a solution of a problem which is comparatively new. A careless or drunken chauffeur upon running his machine into the garage may fail to shut off the flow of gasoline to the motor. This drips on the floor, collects in the floor drain, and may find its way to the sewer. It is a danger to be apprehended either in the garage, in the floor drain trap or in the sewer, as its exceptional volatile character permits it to vaporize rapidly at a low temperature, and this vapor coming in contact with a burning match, gas light or an electrical spark from an electric pump may cause an explosion dangerous in character and destructive in effect. From the sewer gasoline gas may find entrance into house drainage systems. What is the best way to prevent the entrance of gasoline into the sewer and the proper way to care for it in the drainage of the garage?

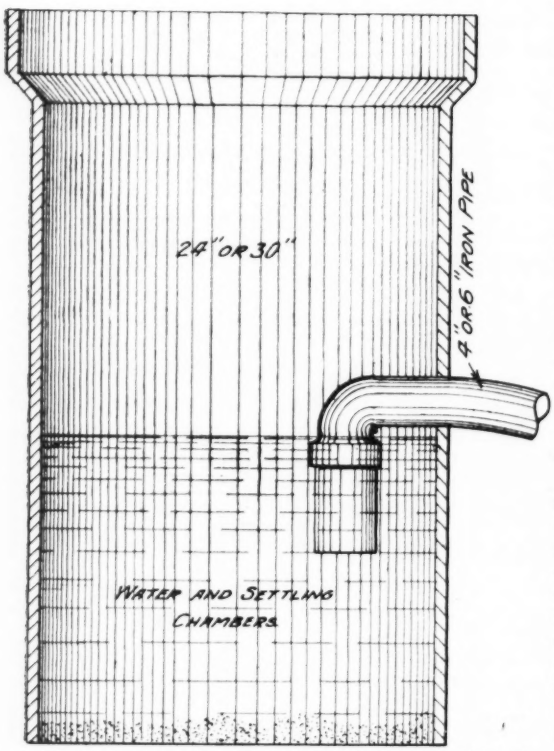
A few samples of what is required in different cities will prove interesting:

W. G. Williamson, inspector of plumbing, Detroit, Mich., recommends the accompanying method of constructing a catch basin in an automobile garage, believing that it will safely care for any accumulation of gasoline and prevent its getting into the sewer. In explaining his plan Mr. Williamson states that while he would not under all conditions say that in sanitary work the cheapest construction would be the best, he believes that in this case it is, and that the method he suggests will prove more satisfactory, or at least fully as satisfactory, as more expensive methods of construction. As will be seen by reference to the full sized drawing, made to a scale of one inch to a foot, the method calls for the use of one section of 24-inch sewer crock set on its spigot end in a bed of three inches of concrete to make a perfectly water-tight base. In the hub end of this two-foot length of sewer crock he places a 24-inch sewer crock with a 6-inch tee, the joint being made of concrete. A 4-inch iron pipe elbow is carried through the 6-inch tee opening of the upper section of the crock, the joint to be made with concrete, and the elbow turning down so that its lower end will come within one foot of the bottom of the catch basin, which ought to provide ample space for sand and settlings so that the basin would not



Detailed drawing showing Wm. G. Williamson's suggestion for catch basin for garage to prevent drippings of gasoline from automobiles finding entrance into the sewer. See article on opposite page.

require cleaning too frequently. The seal provided for this elbow is nearly two feet, which should be ample to prevent any gasoline ever getting into the sewer. Whatever gasoline finds its way into this catch basin will be vaporized and the vapor passes through the perforated cast iron cover of the catch basin into the garage, and thus makes the presence of the gasoline known and causes caution on the part of the attendants. The cover of the catch basin is shown in the plan and consists of a cast iron cover ring with an annular ring which sets into the hub of the upper section of crock pipe and which, if desired, can be set with concrete, and would probably be best so set, as the ring would remain rigid when wheels passed over it. The removable cast iron cover is perforated with 1-inch holes set in rings 4 inches apart and this ring is made with ribs on the underside to strengthen it. The entire catch basin is set so that the floor will drain to the perforated cover.



Suggestion offered by George R. Stolz, Inspector of Plumbing, Milwaukee, Wis., for catch basin for a garage to prevent leakages of gasoline finding entrance to sewer.

Geo. R. Stolz, inspector of plumbing, Milwaukee, Wis., writes that there is no special way used in his city of taking care of gasoline which might drip from automobiles and find its way into the sewer. He permits the use of an ordinary catch basin with elbow turned down and with its mouth high enough in the catch basin to allow about 18 inches or 2 feet of depth for sand or dirt settlings. Gasoline being of a light specific gravity will gather on top of the contents of the catch basin and be dissipated into the garage through the perforated catch basin cover.

How to Install and Cover a Steam or Hot Water Main.

By Phoenix.

Once upon a time about a thousand miles from Lake Michigan, Mr. X., a master fitter said to one of his journeyman fitters "Now, Jim, you get out to that school house job and throw in the work mighty quick."

Jim did so and when the master saw the result words failed him.

Finally he came out of it and began to kick, when Jim said, "Look here, Mr. X., I threw that main in according to orders and that is where it stuck."

Now the opposite type to Mr. X. is Mr. L., who upon going into a new building with his men says in a deep impressive voice, **"scatter the tools."**

It is a ten-to-one-shot that Mr. L. is starting a time and material job on which it would be wise to make haste slowly.

At the heating and plumbing business a person can accomplish a certain amount of work in a day, **if things go right.** When the work falls down it is because the fitter uses his **muscle** instead of his **brains.** Learn to look ahead and endeavor to **save work** instead of trying to **make the job hold out.**

Take an even gait and keep it up. Working by fits and starts never yet made any money for an employer.

The easiest and quickest way to handle a main is to **get it all out before trying to "sling it."** Taking one or two measurements and then running to the bench to cut them up and then trotting back to put them in and then back to the bench again, day after day, makes one tired to even read about it, and certainly cuts down the profits on that job for the employer. Take a piece of chalk line, chalk it. Find out how far in from the cellar wall you are going to run the main. Drive a nail in the joist and fasten the nail—say four feet in from the wall, which is the average distance in practice. Then go to the other end of the cellar and stretch the line tightly, being sure that you are still four feet away from the wall at that end. Then the helper or fitter can snap the chalk line and you have the job marked out so you can put up your hangers and have them "line up."

This will give you a main that will rest easily, be straight, and look like a mechanical job. The general practice is to put a hanger every ten feet. Then figure out how much pitch to give the main—generally ½" to 1" in ten feet—and if you are using the old stye pipe hangers cut the pieces of hanger pipe each ½" longer than the previous one and when enough hangers are cut for the job proceed to fasten them up one each ten feet along your chalk line marked on the joists, or under side of the floor as the case may be, beginning with the shortest, or the longest hanger according as it may be desired to have the main pitch away from, or to the boiler. It might be well to say that there are various adjustable hangers on the market which do away with this cutting the hanger pipes of various lengths, and that these hangers can be easily adjusted

by a level after the main is all slung. Up to this point you have not cut up a single piece of the main, but you have put the hangers all up right and solid and in so doing have saved the boss about one day's time by avoiding the use of temporary hangers **which is just so much extra work thrown away.**

Once in a while a hanger will be located directly over where a tee comes, but the hanger can easily be shifted backwards or forwards a few inches.

Now take off from the blue prints upon a paper or shingle (which keep for the boss so he can get the total amount of pipe used), all the various measurements of the main. If there are no blue prints, locate the radiators in the different rooms and cut the holes through the floors and you can then see just where the branches will come and can take about all the measurements for the main from the cellar.

Then proceed to cut up the main making on one end of each piece the proper fitting, numbering each piece and laying it carefully to one side. **Do all the work you possibly can at the bench.**

You are saving time yet, although on a good sized job you may have now been working over a week, and still **not a single piece of main "slung."** When you have cut up every piece of that main that you can, carry them all down cellar.

Then screw the first piece into the boiler, if that is the starting point, or place it in the hangers if the boiler is not yet set up. Now sling in the second piece and catch it in the first fitting. You will be surprised to find out how much easier it is to catch the threads and you also **are not carrying any weight of pipe on your shoulder.**

Hold the piece you are not screwing up, in position near end just caught with one pair of chain tongs and use the second pair to screw in the moving piece with. The fitter and helper are on opposite sides, facing each other, and with one hand each on each wrench. This gives a push or brace on one wrench and very much more power to be applied on the piece you are making up. Keep your eyes on the tees for it is possible to "set" them very nearly at the correct angle to take the branch pipe to the radiator, as you go along, and the tongs on the stationary pipe will keep the tees along the pipe back of you from turning out of position. Follow up this method until you have thrown in all the main and you can then take the measurements for all of the branches and cut them up at the bench. When they are cut and properly numbered put them in with the smaller wrenches.

If the branches are not longer than five feet the fitter and helper can separate, each taking a certain number of branches and making them up. **It is necessary to take more pains upon a hot water job than upon steam** in order to make tight joints, because the pressure on house heating or office buildings (under six stories) is much greater upon hot water systems than it is upon steam installations. After the main and branches are in place and before putting in the risers, go over the mains and branches carefully with a level and be sure that all the pipes have the right pitch. Then get the measures for the risers. If you are roughing in the job (leaving the stubs properly capped) when measuring do not forget to make the proper allowance for each valve and when these risers are all measured cut, and put in following the same general working method, previously described, the job can be left until it is tested by firing up.

When the system is fully tested and found tight, **the pipe is ready to be covered.**

Some fitters put this on first but it is only taking a chance for if there are many leaks, or several split pipes the covering must be removed and the leaks made good. Many years ago pipes were covered with asbestos paper pasted on, or wound around with string,

This article tells how to save time installing heating mains and how to apply asbestos covering

and then a second covering of hair felt or carpet paper was put on. The hair felt made an elegant breeding place for moths and has been almost entirely discarded.

The covering in general use today comes in lengths of three feet and can be sawed with a dull hand saw into any desired shorter length.

Make a bench out of some rough lumber, get a pot of paste and a paint or whitewash brush, strip open the length of covering, paste liberally the cloth flap that laps over, fold it back and hand it to the fitter if he is working from a ladder. If he can reach the pipe by standing on the cellar bottom, you can have several lengths of covering, always ready, ahead of him and still cut up any special measurements he may call for. After the covering is all in place, put on the brass bands drawing each band down tightly. If special coverings for the fittings have not been ordered the fittings must be covered with the loose asbestos. This is a particular job and is not generally done correctly because it consumes too much time. **The fittings should be covered when hot.**

The first coat should consist of little dabs of the asbestos, each about the size of a marble thrown on the fitting at irregular places say from ½" to 1" apart until the fitting is spotted all over. When this first coat is dried out white, put on the second coat using either your hands or a trowel. Follow up the form of the ell or tee, moulding the asbestos to the shape of the fitting before it dries thoroughly, and smoothing the asbestos with the trowel. It is well in putting on the second coat not to have the fittings too hot nor the asbestos too wet, otherwise it will steam and bulge and perhaps drop off. Some workmen prefer to put on three coats when covering a fitting, but it can be done in two if sufficient care be taken. In case a good, hard finish is desired and the fitting is not to be covered, finally, with cloth, a little Portland cement mixed with the second coat applied will give a smoother and harder finish.

Questions and Answers

SEWAGE DISPOSAL AND CONTAMINATION OF WATER SUPPLY.

Staunton, Va.—To the Editor of Domestic Engineering. Sir: The subjects of this letter, while apparently far apart, are linked arm in arm, carrying death and disease into the different cities and villages of our country. How can cities of our country which obtain their water supply from the head of a pure stream, springs or other sources, dispose of their sewage, in such a manner that they will not contaminate the streams from which the cities below them receive their water supply?

This is a problem that confronts the Federal Government at Washington. The contamination of the Potomac is certain and the questions which, in my humble judgment confront us, are: Can we purify the water after it is taken out of these contaminated streams or shall this contamination by sewage disposal cease?

I cite the city of Washington because it is a city in which we are all interested. But the question applies to all other cities of the United States so situated.

How this problem will be solved I am not prepared to say, but I believe sooner or later some other disposition will be made of sewage. However I will have something more to say in regard to this matter and would be pleased to see it discussed through the columns of your great journal. This matter presents a wide field for discussion and I believe in the end the National Government will solve the problem by national legislation. **Geo. A. Cottrell.**

[Another alternative Mr. Cottrell undoubtedly has in mind but did not state, the treatment of sewage so that the solid, objectionable portions may be separated and destroyed, and the resultant clear water be discharged, entirely free from evil qualities, into streams. It is done in many older countries, notably Great Britain. A step in the direction is to be begun in Chicago at once, where the Trustees of the Sanitary Drainage District have appropriated $10,000 to pay for experiments in sewage treatment.—**Editor.**]

HOW MUCH WILL IT SAVE TO COVER THE PIPING?

Rochester, N. Y.—To the Editor of "Domestic Engineering." Sir: Will you kindly give me some points upon the covering of pipe, and also as to the different kinds of material used? I would like to know, if possible about how much difference covering makes in fuel expense in actual dollars and cents on an ordinary job. **P. T. G.**

Answer.

For description of the means of covering pipe read the article written by "Phoenix" and published elsewhere in this issue. Pipe covering is composed of different materials principally mineral wool, cork, wood, felt, asbestos and magnesia. In underground pipe work ashes, charcoal and sawdust are sometimes used.

The coverings for house work insulation of heat is made in three foot lengths known as solid covering, and others may be called air cell pipe covering.

It has been found by actual tests by the American Society of Mechanical Engineers that the saving effected by the use of covering on low pressure steam or hot water work amounts to from 10% to 30% of the entire yearly expense for fuel. This difference in cost depending upon the character and quality of the covering used.

WHY RUNNING WATER DOES NOT FREEZE SO EASILY AS STILL WATER.

Boise, Idaho.—To the Editor of "Domestic Engineer." Sir: To settle a dispute I would like to have you state in clear and concise language why it is that running water is less likely to freeze than still water. **N. A. W.**

Answer.

Running water is less likely to freeze than still water, for two reasons: First, the motion of the water prevents the crystals from assuming the shape and position necessary to the formation of ice, and, second, the motion of the water brings the heat from the bottom to the surface. Some housekeepers, during cold weather, allow the water to run at one or two of the faucets to prevent the pipes freezing. The same principle operates here; the motion prevents the formation of the crystals and brings through the pipes the water from the general system, which is warmer than that which is exposed in pipes above ground.

WHAT IS THE MATTER WITH THIS GREASE TRAP?

Memphis, Tenn.—To the Editor of "Domestic Engineering." Sir: I would like your opinion on a hospital grease trap that I have been working at and which has given trouble. It costs too much money to have it emptied all the time and we can not lower sewer outlet. We do not see how we can stop the grease from flowing

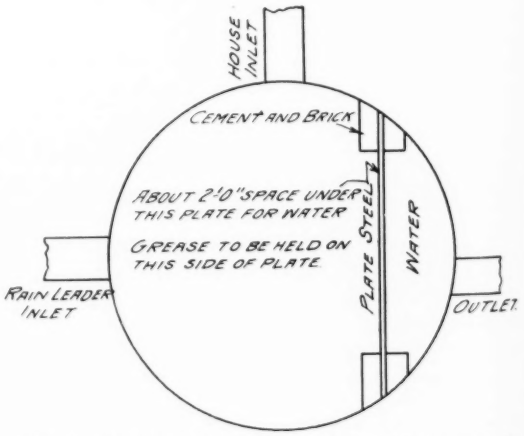


Fig. 1. Plan of hospital grease traps as at present installed.

into the outlet. If you can give me any information I would be very thankful. I will enclose a sketch and trust to hear from you through your paper. G. C.

Answer.

This trap as shown in above sketches is too far away from the sources of the grease and many times larger than is necessary. The trap should be moved back to near the line marked "3 inch, full of grease," and con-

nect that pipe togeth r with the sink wastes into the trap. It might be desirable to place the trap within the building, in which case a cast iron grease trap can be obtained from any jobber.

A trap should be placed so close to the source of grease that it will be intercepted before congealing, and the difficulty will be solved.

The sketch shows not only soil stacks, but also rain leaders discharging into the trap which is 12 feet in

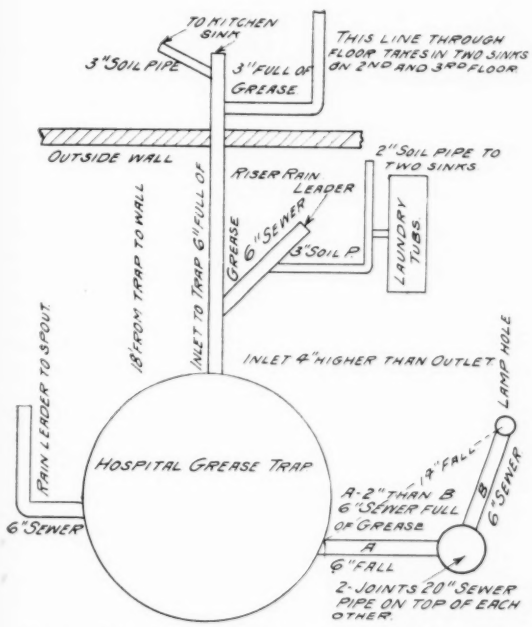


Fig. 2. Plan of grease trap and connections to it.

diameter and is much larger than was ever required for any grease trap.

The placing of a plate, as shown in the sketch, 2 feet from the bottom of the tank and far enough above the water level to prevent grease and scum from overflowing, will hold back the grease so that it cannot escape into, and obstruct the 6 inch outlet to sewer. This same result can be obtained at a less cost by turning the outlet pipe down inside of the tank, for a distance of say 2 feet, using a TY fitting, bullheaded for the purpose, so that the top of the rim will be open to prevent siphonage.

Individual grease traps under the several sinks from which the grease flows would probably be much better.

WHAT MAKES AN UNSTEADY WATER LINE IN THE BOILER?

Louisville, Ky.—To the Editor of "Domestic Engineering." Sir: A few weeks since I put in a medium sized house heating boiler here which has always carried a very unsteady water line. Can you give me any hints as to the cause? R. E. W.

Answer.

The difficulty may be caused from oil and dirt forming on the surface of the water causing it to foam and not generate steam properly. If you have not blown off the job several times this is probably the cause.

Otherwise the trouble may lie with the way the water column is connected. If the boiler walls are very thin, and the bottom of the water column is connected into the side of the boiler where the fire will strike the wall too hot it will generate steam and drive the water out of the glass. You can remedy this by running a pipe back to the return and connecting the bottom of the water glass into the return main a foot or two from where it enters the boiler at the bottom. This will give you a steady and accurate water line.

WHY DOES THIS BOILER LIFT THE WATER INTO THE MAINS?

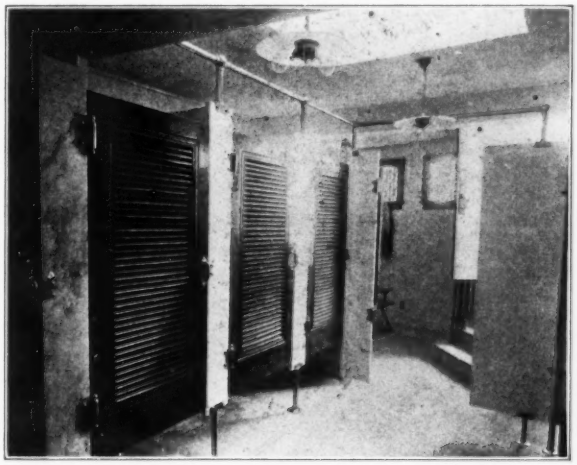
Allentown, Pa.—To the Editor of "Domestic Engineering." Sir: I installed a small steam boiler some time ago and would like to know if you can tell me why it lifts the water out of the boiler when it blows off? K. G.

Answer.

Possibly the boiler you used is not proportioned correctly. The surface on the water line from which the boiling takes place should be large enough so that the velocity of the steam will not be sufficient to project particles of water into the mains.

There is a great variation in the amount of space provided for water and steam in different kinds of boilers. Carpenter states that in the ordinary tubular boilers of today there will be found about 2.0 cubic feet of water and 1.0 cubic foot of steam per horse power and about one-third of these amounts for water tube boilers.

It may be that your mains are not high enough above the water line. In case they are less than 14" above, your trouble probably lies in that fact, and in such a case you will either have to sink the boiler, or raise the mains. It would be possible, also, in such a case to return the water to the boiler by means of steam traps, if a pressure of five pounds was carried on the job.



Interior of the Men's Department in the new Public Comfort Station at Atlantic City, N. J. For view of the exterior, see page xxv.

Wholesale Plumbing

J. S. Jacobsen has been appointed eastern sales agent for the American Name Plate Company, of Chicago, and he has opened an office at Room 1238, 150 Nassau street, New York City.

The Glore Supply Co. of Camden, N. J., has been incorporated with a capital of $50,000, to deal in plumbing specialties. The incorporators are Arthur M. Hopewood and Charles N. Tull.

The Louis Folbe Plumbing Supply Co., of New York City has been incorporated to deal in plumbing specialties. The incorporators are Waldemar Dorfman, of 69 West 113th street; Hyman Frank and Louis Folbe, of 52 Lenox avenue, all of New York City.

The Homestead Valve Manufacturing Company, of Homestead, Pa., announces that it has appointed the Kenneth-Anderson Manufacturing Company of Detroit, Mich., selling agents for that city and vicinity, where a large demand for its products has been created. The agents will carry a large stock on hand at all times, and will be able to make immediate deliveries as a rule.

The N. O. Nelson Manufacturing Company has just leased a five story brick and basement brick building recently completed at 976-978 Howard Street, San Francisco and will remove its branch at Oakland, Cal., within a short time to the new location. The Oakland warehouse became too small for the business of this concern and with Oakland losing her temporary standing as a wholesale center the move to San Francisco was decided upon.

E. V. Brigham.

Secretary and Treasurer of the Union Sanitary Manufacturing Co., of Noblesville, Ind.

The American Brass Company, of Waterbury, Conn., at its recent stockholders' meeting elected the following gentlemen as directors: C. F. Brooker, of Ansonia, Conn.; James S. Elton, John P. Elton and E. S. Frisbie, Jr., of Waterbury, Conn.; A. A. Cowles, A. C. James, C. H. Dodge, G. W. Burnham, T. B. Kent, J. J. Sinclair and Edward Holbrook, of New York; J. A. Doughty, of Torrington, Conn., and A. T. Coe, of New Haven. At the directors' meeting held immediately after the stockholders' meeting the following officers were elected for the ensuing year: President, Charles F. Brooker; first vice-president, E. L. Frisbie, Jr.; second vice-president, Alfred A. Cowles; third vice-president, James S. Elton; treasurer, John P. Elton; secretary, Gordon W. Burnham; assistant secretary, James A. Doughty.

The Union Sanitary Manufacturing Company, which purchased the plant of the McElwaine-Richards Company at Noblesville, Ind., as briefly noted in this column at the time, will continue the manufacture of sanitary enameled ware and soil pipe. The officers of this company are: President, L. C. Huesmann; first vice-president, I. G. Smith; second vice-president and manager, C. E. Gates; secretary and treasurer, E. V. Brigham. Both Mr. Gates and Mr. Brigham, who have the active management of the company, are well known to the trade. Mr. Brigham made his debut over twenty years ago with the L. Wolff Manufacturing Company's branch at Denver, with which he was associated for several years until he resigned to accept the management of the Chicago branch of the J. L. Mott Iron Works, a position Mr. Brigham held till 1904 when he became connected with the Great Western Pottery Company at Kokomo, Ind. Mr. Gates was formerly assistant manager of the McElwaine-Richards Company and he was afterwards appointed general manager by the receiver, a position which he held up till the time of the sale of the property.

Frank H. Knapp, for many years one of the best known plumbing supply men in Pittsburg, Pa., left last week for Los Angeles, Cal., where he has accepted a responsible position as manager of the plumbing supply house of the A. H. Busch Company, at 158 Los Angeles street, in that city. He assumed his new position on March 1. Mr. Knapp has been connected with the Pittsburg Supply Company of Pittsburg for about fifteen years, and during that time has been one of the most popular supply men in the entire district. He started in the plumbing supply business as an employee of the Joel-Hayden Brass Works, manufacturers of plumbers' brass goods at Lorain, Ohio, in 1882, and remained in the factory of that concern for about eight years, after which he spent four years on the road as a traveling salesman for the same concern, covering the entire territory of the Central Supply Association, selling to the plumbing and heating trade. In 1893, Mr. Knapp was offered a position as salesman with the Pittsburg Supply Company, which he accepted at once, and moved to Pittsburg, although for

a part of the time after accepting this position, he called on the trade throughout his old territory. He was later transferred to the Pittsburg district, where he has since been located. After coming to the Pittsburg Supply Company, his advance was rapid, and in a short time he reached the position of buyer of the plumbing supply department, after which he became a stockholder in the company, and also manager of the entire department. He was succeeded as buyer by J. H. Lamberger. Mr. Knapp remained in the latter position for a number of years, and was usually an attendant at the trade conventions and meetings of the supply associations, and was well known to practically every official and salesman in the business. His worth has been so widely appreciated that he has received a number of fine offers from various manufacturers of and jobbers in plumbing supply goods in different parts of the country, but these have as steadily been refused until the flattering offer was received some weeks ago from the A. H. Busch Company. His hosts of good friends in Pittsburg and vicinity will learn with deep regret that he is leaving to locate so far away, but all will also be glad to learn that he has again made such signal advancement. As a token of the regard in which he is held even by his closest business competitors, nothing could have been more convincing than the dinner that was arranged for last week by officials of several of the other leading houses here, and which was given in his honor at the Hotel Lincoln. This party included Charles F. Arrott and A. H. Cline, of the United States Sanitary Manufacturing Company; William B. Bryar, Thomas J. Norton and Fred Moore, of the Bailey-Farrell Manufacturing Company; Thomas Ward, of the Pittsburg Brass Manufacturing Company, and J. H. Lamberger, of the Pittsburg Supply Company.

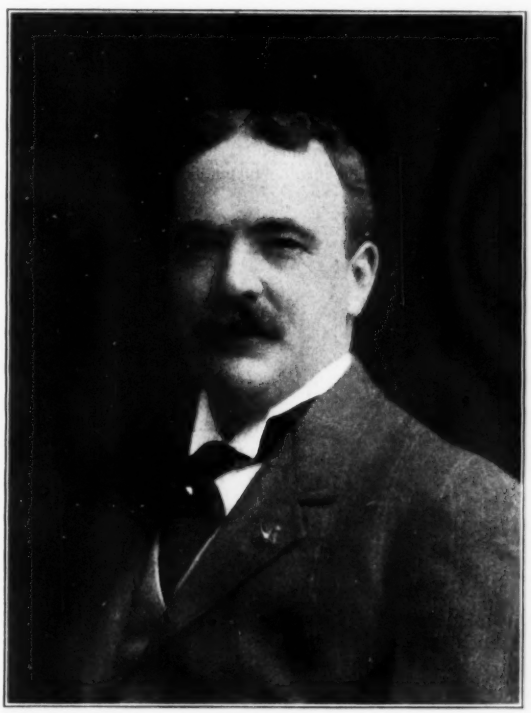
Wholesale Heating

The Crane Company has awarded a contract for the construction of a six-story warehouse and office building on the lot purchased by it several months ago at Second and Brannan streets, San Francisco, Cal. The structure is to cost $170,000 and will be of fireproof construction.

The Beler Water Heater Company, of Pittsburg, Pa., has secured the services of William P. Taggart, formerly a well known member of the Pittsburg Bureau of Plumbing Inspection, and has added him to the sales force of the company. Mr. Taggart, who has a particularly wide acquaintance among the members of the plumbing and heating fraternity in Pittsburg and suburbs, will cover local territory for the present at least.

The Jarecki Manufacturing Company, of Erie, Pa., has decided to move its large branch house in Pittsburg, Pa., from the old location at 1005 Liberty avenue where it has been located for a number of years, and has taken a lease for a long term of years on a large new eight story warehouse recently completed at 311-315 First avenue in the center of the plumbing and heating supply district. The new location has a depth of 80 feet and a frontage of 60 feet. The company will occupy the entire structure, and will move from the present location early next month. This will be done gradually and in such a way that the transaction of business will not be interfered with.

American Radiator Company's Stockholders held their annual meeting on Wednesday, March 3, at Orange, N. J., heard President Clarence M. Woolley's annual report and re-elected the old board of directors without change. A glance at President Woolley's report shows that the net earnings for the year ending January 31, 1909, were $901,254. After the deduction of the preferred stock dividend there remained a balance of $691,254, or 13.8 per cent on the $5,000,000 of common stock. These figures indicate that the company will have no difficulty in maintaining its increased dividends—8 per cent—on the common shares. Concerning the general business of the company the report states: "The total permits issued for the construction of new buildings in the principal cities of the country in 1908 were 3 per cent in excess of those issued in 1907. The lower selling price we were enabled to establish because of the reduction in the cost of raw material induced a vast number of people to purchase our products for introduction in old buildings, and the business from that source was largely increased. This was an important feature of the year's work. Increasing the volume of business, we have been able to reduce the margin of profit. This proves an influential factor in extending the field of demand. The employment of publicity and advertising methods is gradually broadening the demand from all classes of



C. E. Gates.

Second Vice-President and Manager of the Union Sanitary Manufacturing Co., of Noblesville, Ind.

buildings, large and small, not only in the cities but throughout the agricultural districts. * * * An important and significant feature of this report is found in the item of 'quick assets' or working capital, which increased from $1,262,000.00, February 1, 1899, to $3,553,791.00 at the close of business, January 31, 1909." Concerning the operations of the foreign plants President Woolley said: "The German Company has gradually increased its business and has established a demand which necessitates the building of a new plant, to be erected during the current year. The French company has completed its new plant, affording it ample manufacturing capacity to meet the larger demand which has been created in the territory it serves. The English company is likewise enlarging its business and steadily increasing the output of its plant to supply the demand in the British Isles, Africa, South America, and the Orient."

Chicago Steam Trade's Indoor Games.

The eighth game of Indoor Base Ball of the Chicago Steam Trade's Indoor Ball Association was played in the gymnasium of the new Illinois Athletic Club on Tuesday evening, March 2nd, following a supper in the grand dining salon and a pleasant hour in the billiard room.

On account of a special meeting of the Chicago Master Fitters' Association there were but few contractors present, and in order to keep in practice the Salesmen were divided into two teams—the Neversweats (Scudder) and The Dubs (Stackhouse), The Neversweats winning with a score of 34 to 14.

We had with us that evening a new member of the Illinois Athletic Club who was admitted to the Ball Association, a Mr. E. E. McNair, better known as the Laird o' Dunkirk and in the Steam trade as the new Chicago Branch Manager of the United States Radiator Company. Mr. McNair tells us that Curlin' o' the Stanes is the golf of winter pastimes in Scotland but afterwards told us confidentially that it isna in it wi' the indoor ball game as played by the braw Steam trade laddies.

Albert Cook was the Master of Ceremonies during the evening and everything moved with clock work precision. Everybody was delighted and expressed a desire that the games continue up to the time when they will be merged into the Outdoor Games.

Mr. Cook will look after the planning of the games in the future, which will include the matter of inviting guests, etc.

Mr. Drury will look after the recruiting of new members to the Club in the Steam Trades.

Next game Tuesday evening, March 16th, 1909.

Got the Number, but—

Police Captain: You say that an automobile containing several persons sped along the street and struck down an old man?

New Officer: Yis, sor.

"And that after chasing this auto for several blocks you finally succeeded in getting the number?"

"Yis, sor."

"Good! What was the number?"

"There wor just foive persons in th' car, sor!"—"The Circle."

Steam and Mill Supplies

The Sharpe Machine Tool Company of Toledo, Ohio, has been placed in the hands of a receiver who will complete the contract work now on hand.

Chicago Steel and Brass Works, of Chicago, has been incorporated with a capital of $20,000 to manufacture machinery, brass and metal goods. The incorporators are George B. Vance, Frederick J. Ward and Lula J. Dawning.

That a large amount of business can be done with South America by manufacturers in the United States is indicated by the following report from Consul F. W. Goding, of Montevideo, the capital of Uruguay, South America, who writes that he desires to place on record the experience of a representative of an American manufacturer who was recently in that country and whose visit was rewarded by a long list of orders for Uruguay; others can possibly profit by his labors. The consul describes the course pursued by the traveler as follows: "The gentleman was making his first trip as salesman, and what was lacking in experience was compensated for by his tact. He was familiar with the Spanish language, which he acquired while in the Philippines, where he was a close student of Spanish character. On arriving at Montevideo, he called at the consulate and asked for such assistance as might be rendered. His trunks were attended to by a customs agent and a hotel arranged for. He was introduced to one of the leading merchants (an American), who, in turn, introduced him to the merchants interested in his particular line. Some of the goods had previously found their way here through a German house, but owing to a want of technical knowledge of them the goods had been condemned as worthless. Such a serious position had to be overcome. He called on the interested merchants, made himself agreeable, and won their confidence, merely asking them to be present at the demonstration which he would give at a room in the hotel, which had been specially fitted up, at the same time stating that he was not there to take orders, but to show his goods to them. He suited their convenience in every way, was not in a hurry, and assumed an air of indifference as to sales. His demonstration was so successful that it was barely finished when the merchants asked him to take their orders, which were large ones. He left here for Buenos Aires, after a stay of a couple of weeks, the profits on his sales being much greater than his expenses, as had also been the case in the several ports of Brazil. His firm had placed $5,000 to his credit, believing that it would cost that sum to introduce their goods. On leaving here the profits on his sales, all told, were nearly three-fourths of the sum which it was expected the introduction of the goods would cost for all of South America, although Brazil and Uruguay only had been visited. This is an instance where an American representative, both he and his goods either unknown or with a strong prejudice against them, wholly without experience as a salesman, being an educated, tactful man, was able to introduce a line of goods, not only without expense to the manufacturer, but at a profit, the percentage of which was greater than it would have been had the sales been made in the United

States. The reasons for his success are plain. He had perfect confidence in his wares. He was enthusiastic in his work. He was familiar with the language, customs, and peculiarities of his customers. He suited his time to their convenience. He was always tactful. He was always cheerful. But his success was due, in great part, to having been started right from the consulate, the information received, which he had the ability to appreciate and profit by, preventing him from making serious mistakes. What he has done others can do. But one thing should not be forgotten. The methods employed by American salesmen in the United States when selling goods will not only fail to secure orders here, but are looked upon with grave suspicion."

Metal Market

New York Metal Market, March 2.

Copper, Prime Lake	$13.12½
Copper, Lake, Arsenical brands	12.87½
Copper, Electrolytic	13.85
Antimoy, Cookson's	8.00
Lead	3.95
Spelter	4.77½
Straits Tin	28.80

Chicago Iron Market, March 4.

Southern, No. 2 Foundry	$16.85-17.35
Northern, No. 2 Foundry	16.50-17.00
Lake Superior Charcoal	19.50-20.00

March 4, 1909:

Foundry iron was the same price as the week previous
$2.00 less per ton than the year previous
Copper was ¾c less a lb. than the month previous
⅛c more a lb. than the year previous

Cleveland, O.—The readjustment of conditions following the recent declaration of an open market has proceeded in an orderly manner, says The Iron Trade Review. The quotations on plates, shapes, and steel bars are being well maintained. There is less talk concerning the making of Chicago a basing point, but it is believed that prices will be based on Chicago if necessary to take orders. It is not to be expected that the recent reduction, sweeping as it is, will make its effect felt in all lines into which iron and steel enter. The production of pig iron continues at a greater rate than is justified by the demand, the daily production for February being 60,051 tons, compared with 57,654 tons in January. Some interests favor a banking of all furnaces for thirty days. The demand is limited, and in the south, where iron is sold freely at $12 for No. 2, the situation is weak.

New York, N. Y.—Commenting on the copper market "The American Metal Market" says: It has been quiet but very strong. Reviewing the events since Friday, February 26, the facts seem to be that some days ago a negotiation for some fifty million pounds was privately put through, a European firm being the buyer and one of the leading selling companies here the seller, price probably 12½c, covering prompt and future deliveries. We do not state this as a fact, but we believe our information is correct. It is not strange that this should stir up things, and consequently the market was flooded early this week with inquiries and quite some business done, mostly at 12.80 for Electrolytic for both home and foreign buyers. The better feeling continues, but there is less inquiry and some are disappointed that business has not been larger. As one expressed it: "Consumers of copper seem to be obsessed with the idea that the metal can be had in quantities below 13 cents, and the agencies seem, on the contrary, unwilling to make concessions, so that for the most part the looked-for activity has as yet not progressed much beyond the inquiry stage. That the consumers need the metal and that ultimately they will come up to the prices asked, is the opinion expressed among the agencies." There is a very important feature to be kept in mind in estimating the copper situation, and that is the depleted stocks in consumers' hands. Should confidence be really restored in the metal there would be enormous purchases.

The Statistics of the Iron Ore Trade of Great Britain, prepared by C. E. Muller & Co., Ltd., Middlesbrough, England, show that the imports of foreign iron and manganiferous ores in 1908 was 6,057,071 tons, of which 4,479,129 tons came from Spain. The production of Cleveland iron ore in 1908 is estimated at 6,250,000 tons, as against 6,240,103 tons in 1907. The exports of magnetic iron ore from north and central Sweden in 1908 were 3,544,701 tons, against 3,467,294 tons in 1907. Of the 1908 exports from Sweden 2,948,387 tons went to Germany and 596,314 tons to Great Britain, Belgium and other countries. The shipments of pig iron from east coast ports of Great Britain in 1908 to all countries were 906,481 tons, against 1,298,647 tons in 1907.

Public Comfort Stations

St. Louis.—A public comfort station is in the course of construction in Forest Park on the site formerly occupied by the old Missouri Building during the Louisiana Purchase Exposition. Plans and specifications have been prepared by Walter B. Stevens, secretary of the Exposition Company and G. E. Kessler, La Clede building. The cost will be approximately $100,000.

Interior of Women's Department in the New Public Comfort Station at Atlantic City, N. J. For illustration of exterior, see page xxv.

Pittsburg, Pa.—The Buerkle Plumbing Company, of Second avenue, has been awarded the contract for the plumbing system for the new **public comfort station** that will be built this spring on Oliver avenue, for the city of Pittsburg. Many fixtures will be installed.

Association News

Cleveland, O.—The Master Plumbers' Association at its meeting this week passed memorial resolutions on the death of William J. DeWitt a highly valued member of the organization.

Louisville, Ky.—The executive board of the **State Association of Master Plumbers of Kentucky** has decided that the next State convention shall take place on Monday and Tuesday, March 22 and 23, in this city, according to call just issued by President Hugh Nevens and Secretary Geo. F. Roser, both of this city.

Albany, N. Y.—The Master Plumbers' Association of this city has selected the following delegates and alternates to attend the state convention in Schenectady next week. Delegates: Thos. F. Nolan, John L. Fitz Gerald, Albion J. Eckert, Thos. A. O'Malley, Frank F. Schimpf. Alternates: John H. Moran, Jas. J. Gorman, John C. McNally and Jas. H. Doody.

Helena, Mont.—The annual convention of the **Montana Master Plumbers' Association** will be held March 17, 18 and 19 at Alhambra Springs, about nineteen miles southwest of this city, according to call just issued by President R. D. Stocking, of Billings, and Secretary-Treasurer Theo. A. Harker, of Livingston. The headquarters of the convention will be at the Sunnyside Hotel.

CONVENTION DATES.

March 8 and 9, 1909—Annual convention of the **Kansas State Association of Master Plumbers,** at Kansas City, Kan. Headquarters at the Grand hotel.

March 9 and 10, 1909.—Annual convention of the **New York State Association of Master Plumbers** at Schenectady.

March 9-10, 1909.—Thirteenth annual convention of the **Indiana State Master Plumbers' Association** at Kokomo, Ind. Headquarters at the Francis Hotel.

March 17, 18 and 19, 1909.—Annual convention of the **Montana Master Plumbers' Association,** at the Sunnyside Hotel, Alhambra Springs, nineteen miles southwest of Helena, Mont.

March 22 and 23, 1909.—Annual convention of the **State Association of Master Plumbers of Kentucky,** at Louisville, Ky.

March 25 and 26, 1909.—The seventeenth annual convention of the **Michigan State Association of Master Plumbers,** at Flint, Mich. Headquarters at Hotel Dresden.

May 5, 6 and 7, 1909.—Annual convention of the **Southern Supply and Machinery Dealers' Association,** at Chattanooga, Tenn. Headquarters at Hotel Patten.

May 12, 13 and 14, 1909.—The annual conventions of the **American Supply and Machinery Manufacturers' Association** and the **National Supply and Machinery Dealers' Association,** at Pittsburg, Pa.

May 18-19, 1909.—The fifteenth annual convention of the **Pennsylvania State Association of Master Plumbers,** at Wilkes-Barre.

June 22, 23 and 24, 1909.—The twenty-seventh annual convention of the **National Association of Master Plumbers, at Detroit, Mich.**

Plumbing Inspection

Dayton, O.—Plumbing Inspector Hirsch has had a busy time during the month of February and has made a number of inspections. It is expected that the season will continue with a gain and a large amount of new business is expected.

Columbus, O.—Mayor Bond has appointed Chas. A. Werlin, of the East End Plumbing Company, of 554 East Main street, as city plumbing inspector, to succeed G. L. Saunders, who recently resigned. Mr. Werlin entered upon his new duties this week.

Plumbing Legislation

Columbus, O.—Dr. Probst, secretary of the state board of health, will urge at the meeting of the boards of education in Ohio to be held in Columbus on March 24 and 25, concerted action upon the plan of having the legislature at its session of next year pass a bill providing for proper sanitation in public school buildings.

Boston, Mass.—Considerable opposition developed when Representative Pope's bill providing for the appointment of plumbing inspectors by towns for a term of three years was given a hearing before the legislative committee a few days ago. Representative Pope, who hails from Leominster and introduced the bill at the instigation of citizens of that town, was on hand to explain why such legislation should be passed. Under the present laws of the state if a town votes to have an inspector of plumbing they must accept the act placing him under the jurisdiction of the board of health and appointing him under civil service for life or good behavior. Mr. Pope contends that towns should be allowed to name an inspector for a stated period and his stand was upheld by a number of persons present. On the other hand it was opposed by several plumbing inspectors and others who contended that it was in the nature of special legislation sought by but two or three towns. The bill was first introduced last year but was held over for this session.

Indianapolis, Ind.—The bill introduced by Representative Maas for the licensing of plumbers was killed when a divided report was received from the Committee on Rights and Privileges. The bill provided that no plumber, either employing plumber or journeyman plumber, should be permitted to pursue his business without a license, the license to be issued by an examining board. The chairman of the Board of Health would have been the chairman of the examining board and of the other two members, one would have been an employing plumber and the other a journeyman plumber, both to be appointed by the mayor, with the approval of the council or the town board. It was argued that a certain set of plumbers under such a law could control the issuance of licenses and thus eliminate all plumbers who would not join them. Another section to which objection was made was one which would have pro-

hibited plumbing work in any building to be constructed in the class of cities named unless it was done in accordance with specifications laid down by law or ordinance. The plumbers all over the state of Indiana are much disappointed. The effect of the proposed law on the plumbing system would have been marked. They cannot see where the senate got the idea that the bill, if made a law would cause a plumbers' trust to be formed. If anything, the public would be better protected than at the present time. The work, if the law had passed would have been under the supervision of the board of health of every city and a certain standard would have to be maintained or the plumber would not be permitted to continue at the trade. As matters now stand the plumber can put in "any old kind" of a system and charge what he pleases with no assurance to employer that the work will be made satisfactory if wrong, twenty minutes afterwards. For eight years the master plumbers have been agitating the movement but at each legislature the measure has been pigeonholed or killed.

Personal

H. R. Brownwell, representing the Standard Brass Works, of Detroit, Mich., was a recent business visitor in Pittsburg and vicinity, calling on the trade.

Jerome Jung, of Jung Brothers, 1000 Broadway, Brooklyn, N. Y., is spending a two months' vacation at Hot Springs, Ark. He is expected to return in a few weeks.

L. S. Lawson, president of the Lawson Manufacturing Company, of Homestead, Pa., has returned from a business trip to New York City and other cities in the east, where he spent several weeks.

John Farrell, of the Bailey-Farrell Manufacturing Company, of Pittsburg, Pa., has left for Southern California with his daughter, Miss Margaret Farrell, and will spend the remainder of the winter in that part of the country, returning to this city in the spring.

J. B. Weiant, a well known master plumber of New Britain, Conn., is at present enjoying a vacation in the South. He attended the Mardi Gras at New Orleans and is now visiting with S. A. Carnes, a prominent plumbing and heating contractor at Laurel, Miss. Mr. Weiant is acompanied by his wife.

Tom O'Connell, of the shipping department, of the F. W. Webb Manufacturing Company of Boston, has been missed by the patrons of the company for several weeks following a railroad accident in December in which he suffered severe injuries. His friends will be sorry to learn that he still will be confined to the hospital for several weeks to come.

With the final counting of the ballots in the recent primary election in Pittsburg, Pa., the election board decided that Jacob Soffel, the present councilman from his ward, was defeated by one vote. The contest was very close, and it was claimed and generally accepted that Mr. Soffel, who is one of the largest stockholders in the well known plumbing contracting concern of George H. Soffel & Company, had won in the primaries by six votes.

George Denny, for many years a well known plumbing contractor of Uniontown, Pa., but now an erecting mining engineer for Frazer & Chalmers, of London, England, was a visitor in Pittsburg recently, and while here, called on his many friends in the plumbing supply business. Mr. Denny was formerly a member of Denny Bros., which concern sold out its business eight years ago to Charles L. Titus, also of Uniontown, and who still conducts the business. Since retiring from the plumbing business, Mr. Denny has traveled all over the world for his house, and has returned but recently from Tierra Del Fuego, South America, where he has been superintending the erection of some mining machinery. He will remain in Uniontown for some weeks yet.

Snow and Swan of the Peerless Selling Co. in their celebrated bear dance given at the convention of the Ohio Master Plumbers' Association.

H. F. Weaver, secretary of the Peerless Selling Company, of Evansville, Ind., has arranged to have his company represented at three state conventions next week solely for the entertainment of the company's friends attending these gatherings. W. C. Irons will attend the Kansas convention at Kansas City, Kansas; Charles G. Perkins, Jr., will be at the Kokomo (Ind.) convention, while H. F. Weaver, Harry Snow, R. P. Smith and W. H. Fifield will attend the New York State Master Plumbers' convention at Schenectady, N. Y.

Cristino F. Cowan, a member of the American Society of Inspectors of Plumbing and Sanitary Engineers, has for a number of years been chief of the engineering section of the Sanitary Department of the Cuban Government and has done splendid work in improving the sanitation of the cities of the Republic. One of the principal monuments to his industry and intelligence is the Sanitary Code which is now being administered. As there is no civil service to protect the efficient and energetic work of the technical employes of the Cuban Government it was to be expected that with the incoming of a new administration there would be new appointments to the heads of departments. Mr. Cowan has been succeeded by Rojella Callava and it is to be hoped that the new chief will retain all of the features of the former administration which will prove of bene

fit, and be able to carry the work of sanitation on beyond the present admirable standard. In his new position Mr. Callava will have the best wishes of all American sanitary engineers.

The Illinois Chapter of the American Society of Heating and Ventilating Engineers was well represented at the funeral of the late Thomas J. Waters, one of its members and also a charter member of the parent society. The funeral was held Saturday, February 27, from Our Lady of Lourdes Church and the Chapter also sent a handsome floral tribute. Official action on the death of Mr. Waters will be taken at the next regular meeting of the Chapter.

Obituary

Michael B. Siegrist, formerly for many years in the plumbing business at Anniville, Pa., passed on at his home in that city on Friday morning, February 26, in his 70th year. He retired from active business in 1906.

Lewis John Atwood, president of the Plume & Atwood Manufacturing Company, of Waterbury, Conn., passed on at his home in that city on Monday, February 22, in his eighty-third year. Mr. Atwood was one of the pioneer brass manufacturers of the Naugatuck Valley and besides being a successful brass manufacturer was the inventor of many machines and mechanical appliances.

Charles C. Davis, who conducted a plumbing business on Boerum place, Brooklyn, N. Y., passed on suddenly last Saturday, February 27, at his home, 139 Webster avenue. He was the son of the veteran master plumber of 176 Atlantic avenue, Benjamin C. Davis. He was prominent in lodge circles, being a member of Minerva Lodge, F. and A. M., Brooklyn Lodge of Elks and Dauntless Lodge, Royal Arcanum. Mr. Davis was in business for about eight years. He is survived by a widow, two children and his father and mother.

Tips on New Work

Des Moines, Ia.—Plans have been accepted for the Methodist Hospital to be erected at a cost of $150,000.

Altoona, Pa.—The people of this place have voted to issue $300,000 bonds to complete the water works system.

Tulare, Cal.—The construction of a sewerage system costing some $48,000 is under consideration by the city council.

New Hampton, N. H.—The legislature has passed a bill granting this town permission to construct a system of waterworks.

California, Mo.—The citizens here have voted to issue bonds to the amount of $30,000 for the construction of water works.

Holdenville, Okla.—The citizens here have voted to issue $35,000 bonds for the construction of main sanitary sewers. Mayor, C. E. Arnold.

Springfield, Mo.—Figures are wanted on a power house and central heating plant to cost about $10,000 by Drury College. Architects, Miller, Opel and Tarbitt.

Johnson City, Tenn.—It is reported that the city council is considering the question of issuing $500,000 bonds to erect or purchase waterworks.

Duluth, Minn.—John Klosowsky will erect a four flat building on Jefferson street, East, to cost about $12,000 containing modern improvements.

Kansas City, Mo.—At the annual meeting of the Kansas Natural Gas Company next week, the management will ask authority to construct new pipe lines in Kansas to cost about $1,000,000.

Newark, N. J.—The Central Heating System has been incorporated with a capital of $10,000 to furnish steam power for machinery. The incorporators are Edwin S. Prieth, Verona, N. J., B. Prieth and C. H. Smith, Newark.

San Francisco, Cal.—A loan of $300,000 has been obtained by the board of directors here of the Mechanics Institute and within a few days they will call for bids for the construction of a modern nine story building located on Post street, between Kearney and Montgomery streets.

Portland, Ore.—Senate bill No. 254 which has passed both houses and carries the following amounts for improvements: $250,000 for a new wing, equipment, fire protection, etc., at the asylum; $17,500 for improvements at the penitentiary; $7,800 for new buildings at the Institution for the Feeble-Minded; $8,000 for the Soldiers' Home.

Danville, Va.—One of the latest improvements showing that Danville is on the move is the erection of a new school building to be known as the Rison Park school. Harwood & Moss, of Newport News, have been awarded the contract at their bid of $30,925. The basement of the building will be equipped for manual training and domestic science.

Augusta, Ga.—Today, March 6th, the contract for the new Union Savings Bank building will be let. The building will be on the corner of Broad and Jackson streets at the old Library building site. The new home for the Union Savings Bank will add another fine bank building to the already large list of bank buildings and it is said that no city in the South the size of Augusta has a finer lot of bank buildings.

Greensboro, N. C.—Plans have been prepared for the new Sunday School building, which the members of the West Market street church propose to erect on Library place as an addition to that church. The new building is to be three stories high, with dining-room and kitchen on the basement floor, the main auditorium on the second floor and the recitation rooms on the third floor. The building will cost approximately $29,000.

Louisville, Ky.—Additional prestige for Louisville, as a metropolitan city, is promised by Charles Buschemeyer, who gave out the information this week that he is planning a twenty-story office building for the southeast corner of Fourth avenue and Market street. With this project in view Mr. Buschemeyer completed the first detail when he effected the purchase of property adjoining a corner site owned by him from the Ellison estate for a consideration said to be $60,000.

Niagara Falls, N. Y.—The water commission, after an investigation lasting several months, has reported

in favor of the filtration system set forth by the municipal company. The principle of the new filter is similar to that in the Jerome Park reservoir, New York, the water passing upward through successive layers of silica, sand, charcoal and screens of zinc and copper. The water commission found all the promises of the company verified. On March 10 it will be submitted to the taxpayers whether they are willing to expend $500,000 to rid the city of impure water.

Los Angeles, Cal.—The largest gas well in California has been brought in on the Wolfskill ranch in the Sherman oil fields, according to F. B. Henderson, general manager of the Amalgamated Oil Co. The well is being drilled by the Pacific Petroleum Co., a subsidiary company of the Amalgamated. General Manager Henderson says: "It is undoubtedly the biggest gas well that has ever been brought in in California. At present I can give no estimate of the flow, but it is so great that we have encountered tremendous difficulties in capping it, and it has not yet been placed under control. No oil of consequence has been encountered so far in the operations. Whether the gas constitutes a pocket or is of lasting natural qualities remains to be determined."

Contemplated Work

Ft. Riley, Kan.—Office Constructing Quartermaster of this Fort will receive sealed proposals until 10 a. m., March 29, 1909, for construction and plumbing of Wireless Telegraph Station Building.

Burlington, Ia.—D. S. Cooper, secretary of the board of education, will receive bids until 3 p. m. March 18, for the construction and apparatus of a central heating plant from plans by William H. Bryan, engineer, St. Louis; and Temple, Burrows & McLane, architects, Davenport.

Washington, D. C.—Sealed proposals will be received at the office of the Supervising Architect until 3 o'clock p. m. April 3, 1909, for the construction of foundation to the extension and remodeling of the United States Assay Office Building, New York, in accordance with drawings and specifications.

Washington, D. C.—Sealed proposals will be received at the office of the supervising architect until 3 o'clock p. m. April 7, 1909, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring) of the U. S. postoffice at Marion, O., in accordance with drawings and specifications.

Washington, D. C.—Sealed proposals will be received at the office of the supervising architect until 3 o'clock p. m. April 5, 1909, and then opened, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring) of the U. S. postoffice at Dothan, Ala., in accordance with drawings and specifications.

Washington, D. C.—Sealed proposals will be received at the Government Printing Office until 2 o'clock p. m., Monday, April 12, 1909, for furnishing stationery, fuel, ice, hardware, plumbing and electric supplies, lumber, etc., for the use of the Government Printing Office during the fiscal year ending June 30, 1910. Sam'l B. Donnelly, Public Printer.

Fort Yellowstone, Wyo.—The Constructing Quartermaster of this Fort will receive sealed proposals for constructing, plumbing and heating Electrical Power House until March 13, 1909. Proposals should be marked, "Proposals for Constructing, Plumbing and Heating Electric Light Plant," and addressed to Lieut. G. C. Smith, Constructing Quartermaster.

Chicago

Chicago, Ill.—An apartment building that will cost $135,000 is to be put up by Joy Morton at the northeast corner of Drexel boulevard and Forty-second place. The building will be 225 by 90 feet, with a wing, 56 by 85 feet. F. W. Perkins is the architect.

Chicago, Ill.—Fifty flat buildings are to be erected near Garfield Park by S. D. Englebrecht. The buildings will be two story and will occupy lots that are 24x51 feet. The total cost will be about $250,000 and work will be started in about two months.

Chicago, Ill.—It is said that plans are under way by the Illinois St. Andrew's Society of this city for building a new Scotch Old People's Home. The present home, located at 43 Bryant avenue, is said to be very much crowded. A meeting looking toward this end was held at the residence of President John Williams.

Chicago, Ill.—The Hotel Grant is to be the name of a new hostelry which is to occupy the old Inter Ocean building and the Haskell building adjoining, at the northwest corner of Dearborn and Madison streets. It is proposed to expend about $75,000 in remodeling the buildings, included in which will be fireproof floors, and make it a first class commercial hotel. There will be about 200 rooms, of which forty-eight will be with baths. It is expected to be ready for occupancy about July 1.

Chicago, Ill.—The number of transfers of real estate filed for record during the past week amounted to 523, falling somewhat behind those of the preceding week which was 691. The number of transfers for the corresponding week of 1908 was 493. The amount of last week's sale aggregated $1,877,670. This shows a very encouraging state of the real estate market. High grade apartment buildings figured quite prominently, though the sales comprised all classes of property. This would seem to indicate that a renewal of building activity was upon us.

Chicago, Ill.—Two large warehouses, one of them six stories in height and 1,700 feet long, are features of the plan for establishing an immense produce and fruit market at Archer avenue and Dearborn street, according to report. It is said that D. H. Burnham & Co. are the architects. The large warehouse would be nearly three-eights of a mile in length and undoubtedly would have a greater floor area than any other of its kind. Special arrangements are to be made for cold storage. The plan is being backed by the Rock Island and Santa Fe railroads. These roads will be strongly represented in the corporation having the matter in charge. The project involves the expenditure of $10,000,000.

Chicago, Ill.—The following are some of the most important building permits issued here last week: Naike & Stevens, two 2-story brick flats, $11,000 at 735-37 Adams street; J. W. Trainor 1 story brick store,

$15,000 at 5556-68 Lake avenue; Mary Krueger, three 3-story apartments, $30,000 at 5464-66 Everett avenue; A. Eisten, three story brick flats $12,000 at 315 W. 12th street; Railway Terminal and Warehouse Co., $330,000, a three story brick warehouse at 1-17 Indiana street; John J. Link, 3 story brick apartments, $1,700, at 1507-09 Newport avenue; Parker & Moore, four 3-story brick apartments, $50,000 at 5901-09 Wabash avenue and 1204-06-08 Fifty-ninth street; Indiana, Western and Chicago R. R. Co., 1-story brick freight house, $40,000 at 1220-1324 Plymouth place; Mrs. E. Schoonfeldt, 3 story brick store and flats, $27,600, at 2039-41 West Madison street; Samuel Palokow, two 2-story brick stores, $35,000, at 1410-12 Ogden avenue; H. Robinowitz two 3-story brick stores and flats, $34,000 at 633-35 West Harrison street; A. Hanson, 3-story brick apartments, $22,000, at 9123-25 Exchange avenue; Albert R. Boydell, 3-story brick apartments, $60,000, at 5803-5 Michigan avenue; Albert Ellis, 3-story brick apartment building, $30,000 at 920-22 Flournoy street; Murray Walbach, two 3-story brick apartments, $26,000, at 4823-29 Calumet avenue; Featherstone Foundry Co., 3-story brick storage, $25,000, at 9501-49 Cottage Grove avenue.

Notes from the West

Van Buren, Ark.—W. H. Haymen of this place has secured the plumbing in the $26,000 school house being erected at Salisaw, Okla.

Sidney, Iowa.—S. W. S. Rowe, who conducts a plumbing establishment here, would like to receive catalogues from jobbers and manufacturers of plumbing supplies.

Oelwein, Ia.—The Scott Company, of this place, has been awarded the plumbing and heating contract on the new city hall and jail here. The amount of this contract is about $15,000. Architect H. E. Netcott, Independence, Ia.

Little Rock, Ark.—M. B. Sanders has bought a 25-ft. lot adjoining his shop for $25,000. This gives him 50 feet front on Main street and he is now contemplating the erection of a modern business building either six or ten stories high.

Little Rock, Ark.—Mr. Galloway, of Pettit & Galloway Plumbing and Heating Co., has returned to his desk after a four months' stay at the health resorts in the northern part of the state and is going after the business now offering so vigorously that Mr. Pettit has to put on more plumbers to take care of work now under contract.

Argenta, Ark.—The Southern Plumbing Co., of 423 Main street, has been organized by S. R. Laing and R. A. Thiemie, both practical plumbers, Mr. Laing having also considerable business experience in both Argenta and Jonesboro, this state. The new firm is starting off with a nice line of new business and a lot of jobbing.

Wichita, Kan.—R. R. Moore Plumbing, Heating and Electric Company has secured the contract for the installation of an up-to-date plumbing system in the Irving school building. The consideration is $3,000. The contract calls for one ten-double hammered glass urinal stall, ventilated; separate toilet rooms for boys and girls, and also drinking fountains.

Wichita, Kan.—C. A. Baker has secured the following contracts: The C. R. Miller hotel, with the following fixtures: 25 apron front basins; 3 bath tubs, 17 closets, 5 sinks, one automatic gas water heater. The contract price is $2,500. He also has secured the contract for plumbing and heating City Attorney F. B. Stanley's residence. The consideration is $1,500.

The Great Northwest

Crookston, Minn.—Henry Ellis has opened a plumbing shop here.

Wausau, Wis.—D. Danielson will continue the business of the Danielson Plumbing & Heating Co., which has been dissolved by mutual consent. Theodore Danielson retires.

Seattle, Wash.—Lavan, Mueller & Co. have opened a plumbing, heating and ventilating business at 492 Arcade Annex and would like to receive catalogues from the different manufacturers in the business.

Fargo, N. D.—E. J. Harrington of this place secured the contract for the plumbing, heating and electric wiring of the building of the Fargo Mercantile Co. on Broadway and 4th street N. The contract amounts to $1,870.

Fond du Lac, Wis.—Ahern & McCoy have been awarded the contract for installing a heating plant in the public school building at Cleveland, Wis. The consideration is $1,288. This firm also will do the plumbing work for $719.

Manitowoc, Wis.—John Phalen will soon have a very modern plumbing establishment here. He has recently purchased a new business building and improvements are now being completed. He will move into the new quarters about March 15.

Port Townsend, Wash.—The Jackson-Taggart Company has started a plumbing and heating establishment on Taylor street, which will be under the management of Wolcott P. Tibbals who was for several years inspector in charge of the plumbing at the military post.

Ashland, Wis.—W. M. Upthegrove and Thomas McGinn have joined forces and will conduct a plumbing and heating business under the name of Upthegrove & McGinn. Both are experienced in both lines and are pupils of P. J. Dullanty, a pioneer of the trade in northern Wisconsin.

Eau Claire, Wis.—The Eau Clairs Cornice & Heating Co. has been reorganized. Elbert Stockwell, H. G. Helstrom and Christian Ehrhard have bought the interest of D. J. Van Hovenber, and will continue the business under the old title. Elbert Stockwell has been elected president, Mr. Ehrhard vice-president, and Mr. Helstrom, secretary and treasurer.

Salem, Mass.—J. C. Butler & Company have opened a shop at 67 North street, where they will conduct a general plumbing, steam and gas-fitting and sheet metal and furnace business. They would be pleased to receive catalogues from manufacturers and jobbers of goods in these lines.

New York News

New York, N. Y.—Samuel E. Jerman of 346 Ninth avenue will install a new water supply system in a factory building on West Thirtieth street.

New York, N. Y.—The Manhattan Branch of the New York City Association of Master Plumbers will hold a ladies' night social at the Lexington Assembly Rooms on Monday evening, March 22.

Rochester, N. Y.—The Jas. Reynolds Company, of 33-35 Mill street has completed the heating and plumbing work in the new bottling department building for the Flour City Brewing Company of this city.

Rochester, N. Y.—P. J. Donovan, of 705 Lake street, is just finishing some of the plumbing contracts he secured last fall, and he has still some forty houses to complete which will keep him busy till late in the spring.

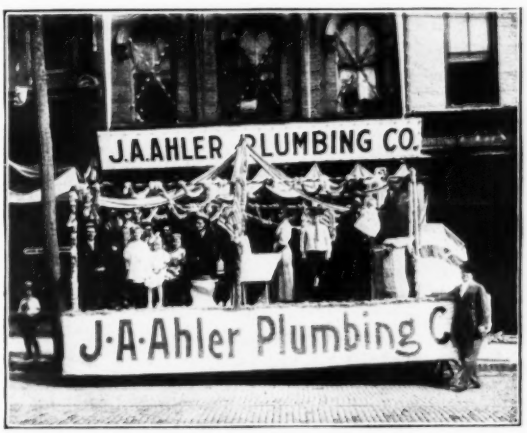
New York, N. Y.—The W. G. Connell Company, plumbing and heating contractors, have issued a most handsomely engraved folder announcing the removal of their offices to the Everett building, Union square, where they now occupy a fine suite of rooms.

Rochester, N. Y.—William G. Widman and Cornelius R. Widman of Rochester members of a co-partnership doing a plumbing business under the name of Widman & Sons, have filed a voluntary bankruptcy petition. Their joint liabilities amount to $3,013.03, and the total of their combined assets is $472, of which $350 is exempt.

Rochester, N. Y.—A. J. Heinzle, the hustling contracting plumber of 702 University avenue, recently added to his many contracts the heating and plumbing work for the New Calvary Methodist Church on Genesee street, amounting to $4,000. He also has under way the heating and plumbing contract in 3 new residences on Culver road, amounting to $6,000. Mr. Heinzle is one of the most progressive young master plumbers in this city and an active member of the master plumbers' association.

Brooklyn, N. Y.—Edward McDonald, a well known master plumber of 98 Cedar street, has retired from the plumbing business and in the future will devote his attention to building in East New York. Mr. McDonald opened a plumbing establishment at the Cedar street address about twenty-five years ago and has built up a flourishing business which in a day was obliterated. The last bit of material or tools was removed from the premises on March 1 and Mr. McDonald retires with the well wishes of a host of friends in the trade.

Troy, N. Y.—[Special.]—Mulligan & Schermerhorn of this city, have been awarded the plumbing contract for the new Emma Willard school buildings, amounting to about $17,000. Gillis & Geoghegan of New York have been awarded the heating contract for the same buildings for $23,000. Wells & Newton, of New York, have just completed a large plumbing and heating contract on the Sage Memorial building for Rensselaer Polytechnic Institute. McNamara Bros., formerly of 317 River street, have moved their plumbing and heating concern to more commodious quarters at 428 River street. William Bailey, Jr., a master plumber of this city has recently been appointed second assistant battalion chief of the Troy fire department at a salary of $1,000 a year. Mr. Bailey is a well known fire fighter and is well qualified for the positon. He will also continue his plumbing business at the old stand, 5 Bridge avenue. John F. Knaupp has been awarded the plumbing contract for the new county hospital for the sum of $3,694 and John A. Ried has secured the heating contract for the sum of $4,261. Henry Calhoun Company, of 515 Fulton street has been awarded the plumbing and gas fitting contract amounting to $3,274 on the new public school No. 1 to be erected by the city at the corner of Sixth and Ingalls avenues. All bids for heating on this building have been rejected and new bids will be received March 19th. The city has also just awarded the following contracts for the reconstruction of public school No. 2: Plumbing and gas fitting to John F. Knaupp of 672 Pawling avenue, for $2,640; heating and ventilating to Henry Calhoun Co., of 515 Fulton street, for $6,524.



An industrial float prepared by J. A. Ahler Plumbing Company, of Knoxville, Tenn., illustrating some of the activities of this energetic firm.

Buffalo

Buffalo, N. Y.—[Special]—Building prospects in Buffalo have not been so bright in years. This is accounted for by reason of lower cost of building materials, including structural steel, a higher class of labor than ever before without an increase in wages, and the general disposition of contractors to take contracts upon a smaller margin of profit. In January last permits were issued by the building bureau for work involving an expenditure of 127 per cent more than for the corresponding month last year, and the percentage of gain last month over February, 1908, was 28. Buffalo is well supplied at present with "skyscrapers," but a good deal of public work is to be done this year. The common council has adopted a resolution to bond the city in the sum of $1,500,000 for the purpose of building two new high schools. The board of supervisors has pending a proposition to buy out the city's interest in the present city and county hall, which, if favorably acted upon, will mean that the city will be compelled to build a new city hall at an estimated expense of several

million dollars. This week the Catholic Diocese of Buffalo bought land in the most fashionable part of Delaware avenue as a site for a new $500,000 Catholic Cathedral. The new mill of the Washburn-Crosby Company on the Island, costing about $200,000, is now in process of erection. When completed the mill will turn out 6,000 barrels of flour a day. Several weeks ago John D. Larkin of the Larkin Soap Company purchased a city block of land in the Parkway district as a site for homes for himself and his two married children. It is estimated that Mr. Larkin will spend upwards of a million dollars in improving the property. Residence building in this city has taken on a great impetus within the past two months, and factory building is only waiting the era of better times which, it is believed, will follow a readjustment of the tariff. Buffalo contractors look for from $15,000,000 to $20,000,000 worth of business this year.

Harvey W. White.

Philadelphia

Philadelphia, Pa.—[Special.]—The final addition to John Wanamaker's new $5,000,000 department store is rapidly nearing completion. The structural iron work is in position up to the second floor. Wm. McCoach, of 1607 Sansom street, has secured the contract for the plumbing work and the Dixon Steam System Co., of Chicago, has been given the heating contract. Cyrus H. K. Curtis has asked for estimates on the printing house to be erected at 6th & Walnut streets by the Curtis Publishing Co. The building will be nine stories high in the colonial style of architecture and will face on Independence Square. The following builders have been invited to submit estimates on the cost of the building: Doyle & Co., Roydhouse-Arez Co., I. E. & A. L. Pennods, Jacob Myers & Sons, Wells Brothers Co., George A. Fuller Co., Thompson-Starrett Co., Hedder Construction Co., and the Norcross Bros. Co.

Pennsylvania

Pittsburg, Pa.—The contract for the plumbing in the new apartment building that is being built this winter on Park avenue for Antonio Cintrite has been awarded to the Oakland Plumbing Company, Oakland, this city. The contract is a good one, as the building will contain ten baths.

Pittsburg, Pa.—Deer & Ober, of 1001 Chestnut street, North Side, have received the award of the contract for remodeling the entire plumbing system in the Nanz Apartment building here. Deer & Ober also report having received several other good contracts calling for residence plumbing.

Pittsburg, Pa.—The contract for the plumbing in the large new six story business block that will be built in the spring for the T. C. Jenkins Estate at Penn avenue and Fifth street has been awarded to Stinson, Kennedy & Company, of Wood street. The contract calls for a large number of fixtures.

Pittsburg, Pa.—The contract for the plumbing in the large new apartment building that is to be built at once at South Negley and Elmer avenues has been awarded to the George H. Soffel Company, of 425 Second avenue. The contract is a good one, as the building will contain twenty apartments, each of which will have a modern bath room and kitchen.

Pittsburg, Pa.—Scarborough & Klauss, dealers in heating specialties, have incorporated the business under the laws of this state as the Scarborough & Klauss Company. The incorporators of the new corporation are Charles W. Scarborough, Edward A. Klauss and George H. Klauss, all of this city. The old concern was located at 3809 Fifth avenue, Oakland, Pittsburg, and this location will be continued by the corporation for the present at least.

Pittsburg, Pa.—W. M. Kuchenbecker has moved his plumbing establishment from the old location to larger and more convenient quarters at 6738 Atwell street, East End, this city. He was, it will be remembered, formerly a member of the firm of Kuchenbecker & Vincent, which recently dissolved partnership. Mr. Kuchenbecker has considerable work on hand at the present time, and much more in prospect for the spring.

Sharon, Pa.—The announcement has been made by the Leslie Plumbing Company of this place that as soon as the business on hand can be closed up, and the stock and equipment carried sold off or otherwise disposed of, the business will be discontinued. The concern is one of the oldest in town, having located here but a short time after this place was founded, and in that time has installed the plumbing and heating systems in some of the principal business houses and residences of this city.

Butler, Pa.—George W. Whitehill has been awarded the contract for the plumbing in the large new apartment building that is being built here this winter for A. M. Christley. The structure will contain ten apartments, each of which will have a bath room and kitchen, while a large laundry will be installed in the cellar. The contract for the plumbing in the new machine shop that is being built here at the plant of Spang, Chalfant & Company has been awarded also to George W. Whitehill. This is another good contract, as many range closets, lavatories and urinals will be installed.

Pittsburg, Pa.—This city will benefit at least $60,000,000 in the next three months by the reduction in steel prices, and other localities are expected to benefit in proportion to their iron and steel connections. This is the situation as outlined by the steel magnates and heads of financial houses in Pittsburg. There are contracts in mill construction, institutional and educational structures, office buildings and the like in the Pittsburg district which will now be pushed, it is stated. They have been held back for more than a year, and the fact that business is now loosening up through the cut in steel prices is considered the beginning of a boom. That business is brightening up in Pittsburg owing to the cuts is known, as contracts have been let for quite a mass of structural work, speedy delivery being one of the requirementts.

Greenville, Pa.—Thomas Stone & Son, one of the largest and best known plumbing contracting concerns in this part of the state has been dissolved by mutual consent, Thomas Stone retiring in order that he may look after his other business interests, which are extensive, and include the Greenville Water Company, of

which concern he is the general superintendent. The business will be continued by his son, Leroy Stone, who will change the name of the former concern to the Greenville Plumbing & Heating Company. The business will be conducted at the old location, and along practically the same lines as in the past. Thomas Stone has been in the plumbing business here for over thirty years, and opened the first plumbing shop in Mercer county, in which Greenville is located. He had the only business of the kind for many years, and during his career in this line has installed the plumbing and heating in the great majority of the business buildings and residences in the city, and in a large part of the surrounding territory. Mr. Stone is one of the best known plumbing contractors in the western part of this state. He has twice been elected president of the Northwestern Association of Master Plumbers, and he also served one term as president of the Pennsylvania State Association of Master Plumbers. When he started in business here, the nearest plumbing establishments were conducted at Meadville, Pa., by Harry Appelby and at New Castle, Pa., by Alexander Robinson. That was in 1878, a year after he located here. Mr. Stone was born and raised in England, but during his residence in this country has become a thorough American citizen, and has done much toward building up this place, being identified with a number of the principal industries and business houses here. His hundreds of friends in the plumbing and heating trade will regret to hear that he has decided to retire from the business, although he will continue to be a regular attendant at the conventions of the Northwestern and State Master Plumbers' Associations, where he will greet his old friends.

Not Replaced.

When old Perkins left the house in which he had lived for forty years and arrived with all his household goods and treasures at the home of his son there was trouble. One of his most treasured family heirlooms was missing—a big family album bound in full calf. Perkins was inconsolable. "I've used it regular for years," he said, "and I wouldn't 'ave lost it for worlds."

"Never mind," said his son, "we'll see what can be done about it."

And from that day he commenced saving up his money until he had sufficient to buy a new album, beautifully bound in crimson plush, with great brass clasps, which he presented to his father, naturally expecting an outburst of thanks. But no. On seeing it the old man's jaw fell to an alarming degree. Then he banged his withered fist on the table with a force that simply staggered young Perkins. "In the name of goodness, man," he roared, "who could strop a razor on that?"—The Exponent.

Two Irishmen were discussing the various books they had read. "Have you read 'The Eternal City'?" "I have." "Have you read Marie Corelli's works?" "I have that." Have you read 'Looking Backward'?" "How on airth could I do that?"—The Tatler.

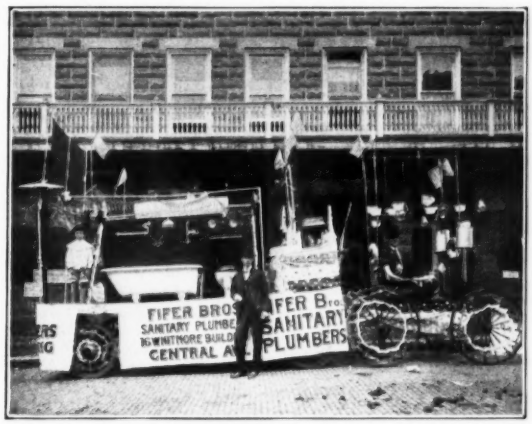
Southern Notes

Mt. Airy, N. C.—The Davis Plumbing Company has on its books several good installations of plumbing work.

Elm Grove, W. Va.—Neuhart & Englehart have secured the contract for the plumbing work on the new city building here.

Knoxville, Tenn.—B. P. Cowell, recently a member of the firm of Slaughter & Cowell, has opened an establishment of his own at 210 West Clinch street.

Petersburg, Va.—Tipton & Wells were the fortunate bidders for the plumbing in the city jail here and for the hot water heating in two new Petersburg residences.



Interesting floats forming a portion of the industrial parade at Staunton, Va., illustrating the activity of Fifer Bros., and showing particularly their ability as plumbers and gasfitters.

Pensacola, Fla.—Charles A. Born, for several years partner and manager of the firm Wicke & Co., plumbers, has purchased the interest of Mrs. Wicke and will now have the sole ownership and control.

Richmond, Va.—J. H. Chappell & Bro. have secured the contract for the plumbing work in the new Hanover apartments. In addition to this they have under way the plumbing and heating in the Geo. B. Johnson hospital.

Chas. Burket, formerly of the plumbing firm of Burket & Williams at Manchester, Va., has sold his interest in that business to accept the position of superintendent of waterworks and plumbing inspector of his city.

Winston-Salem, N. C.—Wayward-Crutchfield Company is the name of a new concern to engage in the plumbing business here. They would appreciate receiving catalogues and price lists from manufacturers and jobbers of plumbing goods.

Winston-Salem, N. C.—L. B. Brickenstein, who has conducted an extensive business in Salem for many years, has opened a branch shop in the Masonic building, Winston, which has been equipped as a modern show room of plumbing and heating goods.

Manchester, Va.—S. H. Gvza Plumbing & Heating Company is the style of a new firm to enter the business here, at 1101 Hvee street. They would be glad to receive catalogues and price lists from manufacturers and jobbers of plumbing and heating material.

Richmond, Va.—Mahoney & Weisiger have recently completed the plumbing installation in the Jefferson Club, the plumbing in two elegant new residences for L. H. Jenkins and T. T. Adams, both on Monument avenue and a similar installation in a residence on the same street for R. W. Howard.

Richmond, Va.—Virginia Plumbing & Heating Company has secured an $8,000 contract, it is reported, for the plumbing and steam heating installation in a seven-story apartment house at Salisbury, N. C. In addition a $3,000 contract for the plumbing and steam heating in the Miller-Rhodes department store here and a $6,000 vacuum heating installation in the city auditorium.

Richmond, Va.—W. P. Longworth & Co. have an unusually excellent assortment of work on hand. We might mention the following for example: Vapor heating in the Protestant Espiscopal Church; steam heating in the Jefferson Club; steam heating in the Hanover apartments; heating in the residence of F. R. Scott and a similar contract for ten houses for H. C. Brown.

Harrisonburg, Va.—Thomas & Company, of 102 E. Market street, has secured the contract for the installation of plumbing and heating systems in the Orphans' Home at Timberville, Va., and also the contract for plumbing and heating two new residences in Harrisonburg. Thomas & Company also has recently completed the installation of plumbing and heating systems at the Carter hall in Clarke county, Va.

Atlanta, Ga.—Plans have been prepared for the addition of a ten story annex to the Piedmont hotel. The annex will face 54 feet 10 inches on Peachtree adjoining the hotel and run through the block to North Forsyth street where it will have a similar frontage, entailing a cost of $200,000 for the addition and improvements to the present hotel. Architect A. Ten Eyck Brown has been instructed to prepare the plans at once, and the owners of the hotel plan to begin the actual work of construction for the annex on June 1. The proposed annex will add about 100 bed rooms to the hotel, and besides, will furnish a new ball room, banquet hall and convention hall on the tenth floor, leaving the present convention hall for a sample room. A decided improvement throughout is announced for the establishment of hot and cold water lavatories in every room in the hotel.

Atlanta, Ga.—Work on constructing "The Third National Bank building," which it is believed will be the name given the seventeen-story skyscraper to be erected jointly by John W. Grant and the Third National bank is expected to be begun on September 1, at the corner of Marietta and North Broad streets, the site of the present Grant building. Mr. Grant and Bank President Hawkins signed up a contract with Architects Morgan & Dillon, W. T. Downing and A. Ten Eyck Brown, calling upon them to combine suggestions taken from each of the plans submitted and put them into a composite drawing, which it is expected will be accepted for the Third National Bank building. According to the suggestions given these architects, the proposed building is to be fifteen stories above the bank offices, which will occupy the ground floor, and the mezzanine or bookkeepers' gallery, really two stories in height, making the building seventeen stories above the sidewalk. Below the bank there will be two floors the first to be given over to a barber shop, manicure parlors, Turkish baths and the like. In the sub-basement the machinery plant, heating plant and the like will be located, which will give the building a total height of nineteen stories from the ground up.

E. De Forest Winslow.

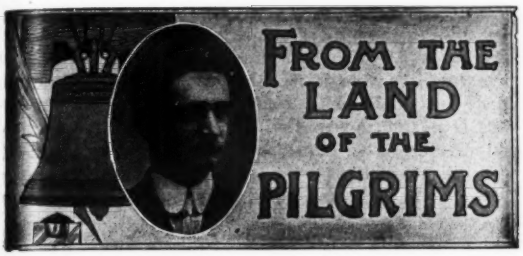
La Porte, Ind.—A plumbers' license was ordered issued to William E. Tyrrell. His bond, $5,000, was approved.

Bloomsburg, O.—The contracts for the plumbing and heating systems in the large new public school building that is being built here have both been awarded to the Snyder Plumbing Company, Washington, O. The completed structure will cost in the neighborhood of $18,000.

Butler, Pa.—George W. Whitehill, of this city, has received the contract for tearing out and remodeling, including installing new fixtures, the entire plumbing system at the Nixon Hotel here. The contract is a large one, as there are, in addition to the public bath rooms, a large number of rooms that have private baths, and all of the sleeping rooms are equipped with lavatories. This work will be started at once, and will be rushed to completion as rapidly as possible.

Some years ago a gentleman in Boston made tests of the air in the street cars of that city and found that it contained 23.3 parts of carbonic acid to 10,000 parts of air. Normal air contains 4 parts of carbonic acid in 10,000. At the same time, tests made of the air in the Berkeley street sewer of that city showed only 10.4 parts of carbonic acid per 10,000. According to these tests, a man crawling through the sewer named would be no worse off, so far as his fresh air supply was concerned, than the fellow who paid his nickel and patronized the street cars. The only difference would be that with the fellow in the sewer it is a case of breathing sewer air or none; while the street car passenger might have fresh air for the asking. In other words, it is an easy matter to ventilate a street car; not so easy to ventilate a sewer. Men who work in shafts and tunnels under the surface of the ground have fresh, pure air pumped down to them. People who ride in street cars are not compelled to use pumps in order to obtain a supply of fresh air. All that is needed is to insist on having the upper windows open a little to let the foul air out and the doors ajar enough to let good air in. The singular fact is, however, that many people who ride in public conveyances don't want fresh air and won't have it. Worst of all they won't let other people have it.

It is estimated that New York building improvements now under way will cost about $310,000,000.



Great Barrington, Mass.—Lahey & Co. have closed their plumbing shop on Railroad street.

Brockton, Mass.—E. T. Spear is making alterations to his plumbing shop on Belmont street.

Pittsfield, Mass.—R. A. Kelly has opened a plumbing, steam and gas fitting establishment at 238 Tyler street.

Onset, Mass.—Thomas Reynolds of Fall River has leased quarters to be used for plumbing and steam fitting business.

Biddeford, Me.—Mahaney & Monier, the Washington street plumbers, are doing the plumbing at the Trull hospital on May street.

Boston, Mass.—Joseph H. Larkin, plumber, has filed a petition in bankruptcy. He owes $4,176 and his assets amount to about $1,900.

Manchester, Conn.—T. P. Atkin, who formerly conducted a plumbing establishment on Main street, has sold his store property to J. H. Stannard & Co.

Lawrence, Mass.—Ralph Brackett, the newly appointed member of the board of health, is a plumber connected with the firm of George W. Dodson & Co.

Winsted, Conn.—Barrett & Kennelly, who have conducted a plumbing establishment for several years, are to dissolve partnership. Mr. Barrett will continue the business.

Springfield, Mass.—G. F. Wilbraham has been awarded the contract for replumbing the third district school building at Nashville, the work to be done during the spring vacation.

Brockton, Mass.—A Brockton concern whose name is withheld for the present has been awarded the contract for plumbing the new county jail at Plymouth. The bid accepted was $4,270.

Monson, Mass.—Frank W. Cunningham has resigned his position in the plumbing department of E. W. Root & Co. of Maple street and has taken a similar one with John F. Killegrew on Main street.

Lenox, Mass.—At a recent meeting of the school board bids were received for plumbing and heating the new high school building. No award has yet been made and until it is the list of bidders is not made public.

Rockville, Conn.—The plumbing firm of Scheibe & Mann, of Village street, has been dissolved and the business of the concen will be continued by Albert J. Mann. Henry Scheibe will also continue business, taking another location.

Milford, Mass.—The board of trade is raising $1,000 for the purpose of purchasing a gas engine and installing a heating plant in the factory to be used by the Three K. Shoe Company. Secretary H. A. Daniels has the matter in charge.

Gloucester, Mass.—Stenstream and McLoid have moved their plumbing business to Pepperell, Mass., where they have fitted up a model store on Main street. They will be ready for business in their new establishment about March tenth.

Beverly, Mass.—The proposed organization of a master plumbers' association in this city, which was reported last week has been effected and it will include master plumbers in this city, Beverly Farms and Manchester. Robert Robertson was elected president and F. W. Williamson, secretary.

Pittsfield, Mass.—D. F. Farrell & Co., the local plumbing firm, have purchased a piece of property near the corner of North and Linden streets where they will erect a fine new business block. The location is one of the most sightly in the city and the property is said to be worth $20,000.

Salem, Mass.—John F. Carbeen has been awarded the contract for the plumbing in the new summer residence of Seth L. Lowe at Marblehead, also the installation of eight new bath rooms in Rockmere Inn, Marblehead. He is also to do an extensive plumbing job in Eugene Fabyan's residence at Salem.

Bangor, Me.—The contract for plumbing and heating the new children's ward at the Eastern Maine General Hospital has been awarded to C. H. Babb & Co. for $8,533. The other bids for the work were as follows: Leighton Plumbing & Heating Co., $8,594; M. Ahern, Boston, $8,953; M. & H. Collins, Boston, $9,970.

A. H. French.

BLANK FOR

Report of an Award of Heating or Plumbing Contract

(Cut out, fill in and mail promptly)

DOMESTIC ENGINEERING
Chicago

We have been awarded the contract for

_____
plumbing or heating

the _____, the
kind of building

amount of the contract being $_____

Owner's name _____

Address _____

Architect's name _____

Address _____

General Contractor's name _____

Address _____

Our own name _____

Address _____

New Jersey

Newark, N. J.—Zimmerman Plumbing and Heating Company has secured the contract for the plumbing and heating in J. W. Clark's new residence. Consideration $2,000.

Newark, N. J.—J. B. & F. M. Raub, owners, 958 Hilton avenue, Hiltonia, with George Schreiber, for plumbing work, $750; W. E. Lehman, architect. Louisa Hanley, owner, north side of Claremont avenue, Montclair, with Cahill & Fay, for plumbing work, $1,095. John Eicher, owner, 667 Belmont avenue, with J. P. & H. Rittersbacher Co., for plumbing and other work, $835. J. B. & F. M. Raub, owners, with George Schneider, contractor, plumbing work, $750; Hilton avenue, Hiltonia, N. J. J. C. Tierney, owner, Montclair, N. J., with Casey & Van Keuren, contractors, plumbing work, $1,950. Louisa Haney, owner, n s of Claremont avenue, between North Willow street and Greenwood avenue, Montclair, with Cable & Fay, for plumbing work, $1,095.

Master plumbers and master steam-fitters are earnestly requested to send us reports of the award of plumbing and heating contracts of $1,000 or more, as soon as these have been awarded, while the information has news value. Kindly address Editor "Domestic Engineering," 49-53 N. Jefferson street, Chicago.

Pacific Coast

Portland, Ore.—The Water Board of this city is asking for bids for 120 sleeves and valves of various sizes for use in tapping water mains under pressure.

Los Angeles, Cal.—Blumve & Jay have been awarded the plumbing on the new hall of records at their bid, $20,987. Bids for steam heating to be opened March 22.

Los Angeles, Cal.—Emerson & Heckman is the title of a new firm organized to conduct a plumbing, heating and ventilating business at 228 East Seventh street, and would be pleased to receive catalogs and prices on all goods pertaining to the crafts. E. E. Emerson, formerly of Chicago, and C. J. Heckman, formerly of Zanesville, O., constitute the firm.

San Francisco, Cal.—The Board of Public Works has just given out the specifications for the 43,000 tons of cast iron pipe that is to be installed in the salt water fire protection system upon which work is now in progress. Bids will be opened on March 10 and the names of the successful bidders will be announced soon after that. Besides turning over copies of the specifications to the local firms a large number were mailed East and some close figures are expected on the material to be furnished. The specifications are such that they will permit dealers to make their offers on three delivery propositions. Laid down in San Francisco, delivered to the cars at any main Eastern shipping point, or delivered at shipside in any of the following harbors: New York, Philadelphia, Baltimore, Charleston, Savannah, New Orleans, Galveston or Mobile. Delivery is to commence within thirty days after the contract is awarded and will be as follows: fifty tons per day for the first month, one hundred and fifty for the second and third and two hundred per day from the fourth month on until the contract is filled; the whole 43,000 tons to be delivered within 330 days. In addition to the salt water fire protection system there is an immense amount of other municipal work planned which will require much pipe and plumbing material and work on some of these projects will commence at an early date. Money has been secured for the erection of a number of school buildings, sewers and for a new Hall of Justice on the site of the old one on Kearny street. From the recent bond sales $1,000,000 a month will be turned over until $5,400,000 has been delivered. Although it has been definitely decided that the old City Hall is unsafe there is still considerable agitation in some quarters to stop the work of tearing it down. Architect Taylor who has made a careful inspection of the ruin declares that not more than ten percent of it is worthless and that the balance could be made ready for occupancy at a comparatively small expense. He says "The heating plant of the City Hall is in perfect order and has been well cared for since the great quake. The tower and dome are almost perfect and it is a shame to tear down such a beautiful landmark."

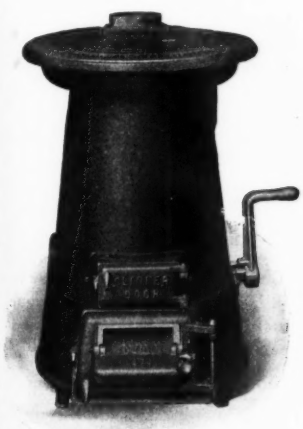
Book Reviews

"The Planning of Fever Hospitals and Disinfecting and Cleansing Stations," by Albert C. Freeman, M. S. A., London, England; The Sanitary Publishing Co., Ltd., 5 Fetter Lane, Fleet Street, E. C.; Price seven shillings, 6 pence, which equals $1.80. Mr. Freeman is an architect who has written considerably on poor law buildings and mortuaries, crematoria, etc., and endeavors to give in this book a practical guide in which the principles which are invariably followed in designing hospitals and disinfecting stations are placed on record. The volume is 8⅞x5¾" and contains 165 pages including the index. While written for the British public and having in view the provisions of the British Parliamentary acts, much of the information should be useful to architects and engineers who are called upon to build hospitals and disinfecting stations in other parts of the world. The book is quite treely illustrated with many plans, elevations and detail sheets of successful hospitals. After quoting from legislation which governs the construction and operation of buildings of this class in Great Britain, the author treats his subject under the following heads: Provision of Sanatoria by Local Authorities; Isolation Wards in Workhouses; The Planning and Construction of Hospitals; Disinfecting the Clothing; Destruction of Refuse; Laundry Machinery; Kitchen Fittings; Remarks on Wards; Temporary Hospitals; the Metropolitan Asylum Board and their Hospitals; Provincial Disease Hospitals; Tables of Cost of Hospitals; Disinfecting and Cleansing Stations.

"Modern Methods of Sewage Disposal," by W. H. Trentham, M. E., and James Saunders, C. E., London, England: The Sanitary Publishing Co., Ltd., 5 Fetter Lane, Fleet Street, E. C. Price 2 sh. 6d.=60 cents. This is a small volume, 7½x5¼", cloth bound, with sixty pages, including index. Its authors have writ-

Spring Demand.

One of the best methods of "boosting" sales is by having plenty of stock on hand and displaying it freely. IDEAL Water Heaters are seasonable goods and present tendencies indicate a larger sale than ever on these heaters for Spring installation.



IDEAL Water Heater

An attractive window display of IDEAL Water Heaters will frequently suggest to the prospective buyer the wisdom of having his auxiliary hot water supply installed now and ready for summer use, before the rush of the steam fitters summer work begins. Suggesting timely purchases shows good business ability.

AMERICAN RADIATORS & IDEAL BOILERS

AMERICAN RADIATOR COMPANY

General Offices, 282-286 Michigan Ave., Chicago.

New York	Cincinnati	Cleveland	Atlanta	Brantford, Ont.	Denver
Philadelphia	Boston	Milwaukee	Minneapolis	Seattle	St. Louis
Pittsburg	Buffalo	Indianapolis	Kansas City	Omaha	San Francisco

ten with the intention of giving information on "the most modern methods of sewage disposal," and of simplifying complications which arise in discussions of the question of sewerage for towns and villages, to show how such improvements may be carried out without nuisance to the public, and how sewage may be disposed of without injury to adjacent property or to the public health. The subject is treated under the following heads: Sewerage Systems; Powers and Duties Imposed Upon Local Authorities by the Legislature; (gives excerpts from Public Health Acts of British parliament). Sewage Purification; Land Treatment of Sewage; Artificial Primary Treatment of Sewage; Artificial Secondary Treatment of Sewage; Storm Water Filters; The Ideal Method of Treating Sewage; providing for the destruction of the sludge; avoiding the danger of disseminating disease by the spread of pathogenic germs; keeping working expenses low, with a small amount of labor; creating a clear and sparkling effluent, chemically and bacteriologically pure.

The official proceedings of the American Society of Inspectors of Plumbing and Sanitary Engineers for the third annual convention, held at Chicago, February 10-12, 1908, have been published. After examining this volume of 356 pages, entirely filled with valuable papers and with invaluable discussions, we are unable to understand how any inspector of plumbing or sanitary engineer can reconcile his best interests with non-membership in the society. The book contains a list of the members arranged alphabetically and also by states and cities. Non-members of the society may purchase copies from C. S. McCosker secretary-treasurer, Mobile, Ala., at $2.50 each.

With the Makers

The Vapor Radiator Valve.

The Vapor system radiator valve is an attractive example of mechanism. It is very heavy and substantial and handsomely gotten up, the finished parts being highly polished and nickel plated. The handle is ebony.

Vapor radiator valve. The position of the handle indicates valve ¾ open.

Each valve is marked with its number, from one to six; also stamped "Open" and "Shut." It is perfectly steam-tight, being self-packing in the valve-stem. It is easily opened and shut, and can be readily set by a finger touch. It is graduated to deliver vapor to the radiator to heat from a fourth up to the full surface. This radiator valve is not only ornamental and easily operated, but is placed at the top of the radiator in easy reach without stooping. Other important advantages of Broomell's vapor system of heating, from the viewpoint of the occupant of the house, is—the manufacturer claims—the individual regulation of each radiator, more or less heat as desired, governed entirely by the special radiator valve, and made possible by operation of the Broomell system without pressure in pipes and radiators. The absence of air-valves on radiators is another point. The air is removed from all radiators through the return piping, by means of a partial suction obtained by introducing an air-line, from the receiver where condensation is delivered, into the chimney. Complete information about this system will be sent promptly to interested parties who write the Vapor Heating Co., Room 552, North American Bldg., Philadelphia, and mention "Domestic Engineering."

The Eagle Copper Range Boiler.

Eagle Copper Range Boiler

Gerstein Bros. & Cooper, of 31 West First street, South Boston, Mass., manufacture the Eagle copper range boiler, shown in the accompanying illustration. This boiler is tested to 200 lbs. pressure, guaranteed against leakage and collapse and warranted to stand a working pressure of 100 pounds. The manufacturers' method of connecting the head and the bottom of the boiler does not only add strength and durability but it also gives it a neat appearance, and the reinforcing of the interior with solid brass tee rings prevents collapsing, it is asserted. The manufacturers will be glad to send interested parties illustrated folders containing full particulars upon request mentioning "Domestic Engineering."

Practical Rack Labels for Plumbers.

The failure to locate quickly and accurately the various fittings required on any particular job is a constant source of annoyance, loss of time, and consequent expense to many plumbing shops not arranged in a systematic manner. The simplicity with which some of these troubles can be avoided is easily seen by a visit to any up-to-date establishment which has adopted the use of rack labels, of which probably none better are made than those brought out by the Mercantile Label Company, of Nashua, N. H. These labels are printed on waterproof cardboard in plain readable type that can be seen at some distance. They also

illustrate each fitting plainly and give its size. Further information about these desirable adjuncts to the up-to-date establishment can be obtained either from the manufacturer or from the F. W. Webb Mfg. Co., of Elm street, Boston, Mass.

The Magee Furnace Company, of Boston, recently enjoyed considerable publicity through the publication of a fourteen-page article in the National Magazine, under the caption of "The Hearth of Today." The article was profusely illustrated, showing views of the company's executive offices, show rooms, plant and various stages in the manufacture of its products, which were fully described, with a brief biography of John Magee, the founder of the company, and its present managers.

In this issue the Leader Iron Works of Decatur, Ill., presents an advertisement which is intended to show readers of "Domestic Engineering" the advantage of being in touch with them, because of the large general advertising campaign which they will carry on during the month of March. The advertisement contains a list of magazines and farm papers in which their advertising to the general public will appear during the month of March. We wish all energetic readers of "Domestic Engineering" would appreciate the importance of being in touch with firms who carry on large general campaigns, advertising their products to the general public. The replies which such firms receive from advertisements are referred to plumbers and piping contractors in the neighborhood of the source of the inquiry. Such general advertising campaigns create business for the local fitter and he should do his part by being in touch with the advertiser, so that he may receive the benefit.

An Approbation.

"So you approve of comic valentines?"

"Yes," answered Miss Cayenne. "They give the anonymous letter writer a chance to gratify his instincts without doing any real damage."—Washington Star.

Trying to Prove It.

"Do you know they'll carry hogs on this road cheaper than they will passengers?" said the red-faced man in the smoker.

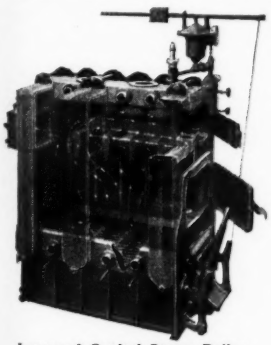
"Is that so?" replied his neighbor, who was being crowded in his seat; "how much did you pay?"—Yonkers Statesman.

Trade Literature

From the Locke Regulator Company, of Salem, Mass.: "Stop the Engine," an edition de Luxe of the catalogue of the Locke Engine Stop and Speed Limit System, containing a complete description of the Locke safety appliances for steam and electric motors, with typical illustrations in representative plants.

From William S. Emery, 74-78 Cliff street, New York City: "Catalogue of Plumbers' Woodwork for Domestic and Export Trade," size 4x6½ inches, 40

About Those Divided Sections.



Improved Capitol Steam Boiler showing construction, fire travel and waterways.

Perhaps you think we're always talking about those "Divided Sections." But then, it's worth repeating. Their advantages must appeal to you.

They are "light weight units" and can be handled with the smallest amount of labor.

Proper allowance is made for expansion and contraction, extending the life of the boiler to the maximum.

The "Quick Repair" feature of Capitol Boilers is founded on them. This means that in case of accident to the boiler, the sections can be removed and the boiler repaired temporarily. With no other boiler can this be so easily done.

United States Heater Company.

General Offices and Works: Fort St. and Campbell Ave., DETROIT, MICH.

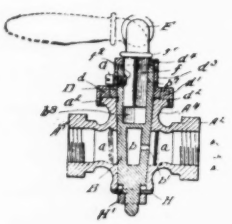
Branches:		Sales Agencies:
DETROIT	139 Jefferson Ave.	NORFOLK & RICHMOND, VA., Virginia-Carolina Supply Co.
NEW YORK	129 Worth St.	MINNEAPOLIS, MINN., Plumbing & S. F. Supplies Co.
CHICAGO	34 Dearborn St.	ST. LOUIS, MO., L. M. Rumsey Manufacturing Co.
KANSAS CITY	120 W. 11th St.	DENVER, COLO., Kellogg & Stokes Stove Co.
OMAHA	916 Farnam St.	

pages, illustrating staple tanks, seats and fittings, and some new specialties. The place of honor in this catalogue is given to the "Indestructible" closet seat and the "Acme" self-raising seat, both of which are illustrated and described in a most thorough manner. Closet tanks, ball cock, syphon valves and brackets are some of the other products treated in this handy and neat catalogue.

From the Sims Company, of Erie, Pa.: "The 'Sims' Oil Filter," a circular describing and illustrating a new oil filter, designed and manufactured by The Sims Company, and for which it has just been allowed letters of patent. This filter is made both in the unit and the duplex type, and the manufacturer describes it as being made of the best grade of galvanized sheet iron, double-lapped joints, riveted, well braced and soldered. The unit type has a partition through the center, and the duplex type has two or more such partitions according to the size; this separates the clean oil section from that used for filtration. The clean oil is not disturbed when the filtering section is being cleaned. For continuous oiling systems this arrangement is said to be very effective. These oil filters are guaranteed to give perfect satisfaction and will remove the impurities from all grades of oils. They will be shipped to any responsible party on a thirty days' trial if the fact is mentioned that "Domestic Engineering" gave you the tip.

Patents

912,569. **Stoc-Cock.** Herman M. Hoelscher and John H. Gavin, Chicago, Ill., assignors to L. Wolff Manufacturing Company, Chicago, Ill. The following claim is made for this invention: "In a stop cock, the combination of a shell having a plug seat and a top rim, flanges of quadrant form on said rim extending inward from the outer boundary of the rim and terminating at points about half way to the interior boundary of



the rim, the said quadrant flanges being arranged diametrically opposite to each other, the plug having a handle opening and fitted within the shell and having a rim which fits concentrically within the said quadrant flanges of the shell, the plug rim being formed with four diametrically arranged notches, and a cap inclosing the rim of the shell and formed on its under side with radial projections which extend past both the quadrant flanges and the rim of the plug so as to engage both of the same but allow a limited turning of the plug, the notched rim of the plug fitting on the rim of the shell and the cap having a top horizontal flange which extends over the top of the plug, substantially as set forth."

912,990. **Supply and Waste for Bath-Tubs.** Dennis C. Charmois, Canton, Ohio.

913,000. **Oil Separator.** Amos E. Embree, Boise, Idaho.

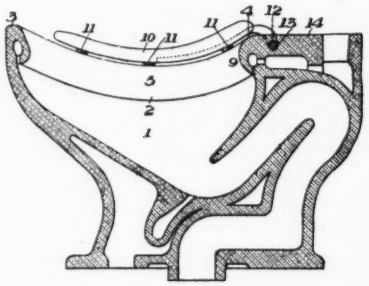
913,001. **Tapping-Die.** George Ermold, Elizabeth, N. J.

913,004. **Machine for Bending Pipe.** Charles Gordon, Hartford, Conn., assignor to Whitlock Coil Pipe Company, West Hartford, Conn., a Corporation of Connecticut.

913,010. **Mercury Vacuum-Gage.** August B. Hohmann, Richmond Hill, N. Y., assignor to Charles J. Tagliabue, Brooklyn, N. Y.

913,033. **Regulator for Hot-Water Heating Systems.** John M. McKeown, Philadelphia, Pa.

912,754. **Water-Closet Seat.** Edward C. Stover, Trenton, N. J., assignor to Trenton Potteries Company, Trenton, N. J., a Corporation of New Jersey. Several claims are made for this invention, the following being probably the most notable: "In a water closet,



a bowl having an integral curved rim, the side portions of said rim being lower than the front and rear portions thereof, a saddle-shaped seat open at both the front and rear ends and curving downward from the back and upward toward the front."

913,034. **Purification and Clarification of Water.** William McMurtrie, New York, N. Y.

913,036. **Sewer-Pipe Coupling and Connection.** Mads Nelson, Canton, Ohio, assignor of one-half to Frederick W. Pedersen, Canton, Ohio.

913,077. **Bath or Basin Waste.** Henry M. Weaver, Mansfield, Ohio.

913,089. **Machine for Threading Pipe.** Victor E. Ankarlo, Somerville, Mass.

913,097. **Flushing-Valve.** George A. Brown, Allegheny, Pa., assignor, by direct and mesne assignments, of one-third to Joseph P. Bingaman and one-third to Charles F. Bingaman, Pittsburg, Pa.

913,144. **Detachable Pipe or Hose Coupling.** George James, Samuel Benson, and William Wilson, Chicago, Ill.

913,227. **Tide-Valve.** John A. Morrison, Beverly, Mass.

913,265. **Pipe Connection.** Benjamin D. Coppage, Wilmington, Del., assignor to Edge Moor Iron Company, Edgemoor, Del., a Corporation of Delaware.

913,287. **Angle-Cock.** William B. Heiniger and William E. Vailance, Jersey City, N. J.